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Gold — the Eternal Metal

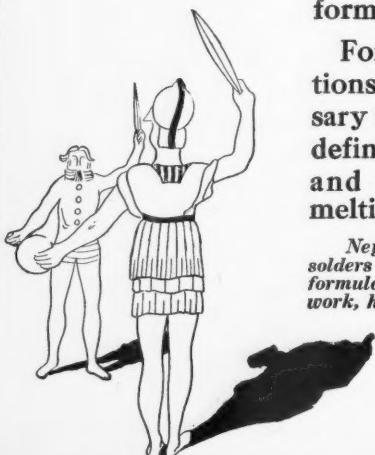
Etruscan Soldering

THE peculiar style of the jewelry produced in ancient Etruria was due to the granular or soldering method of applying the ornamentation. After the article was shaped, tiny globules of gold were soldered to it to form the design.

Modern dentistry employs soldering, not for ornamentation, but for construction; many caps, bands, bridges, etc., being formed in this way.

For these delicate operations it is manifestly necessary to have gold solders of definite working properties and of several different melting points.

Ney's Standard Solders and the solders of the Ney-Oro Series (Weinstein formulae) are peculiarly adapted to this work, having been prepared with special reference to their several definite purposes.



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A Method of Administering Nitrous Oxide and Oxygen

By H. Howard Powers, D.D.S., Bay City, Michigan

In presenting this paper I fully realize that many of the thoughts presented are not new, yet if all of the thoughts presented are combined and worked into what may be termed a system, I believe the final result may possibly be of some value—at least such has been the case with the writer.

For several years the writer demonstrated Nitrous Oxide and Oxygen. Those of you who remember the day when it was quite the usual occurrence to hold Nitrous Oxid-Oxygen clinics upon a raised platform among the Manufacturing Exhibits must realize now that the demonstrator, amidst such surroundings, usually had his hands full. I have cited the above in order to impress upon the reader that what is offered in this paper has little of theory but much learned as the result of hard knocks during my demonstrating days.

PREPARATION

It is essential that the patient be properly prepared. My reference blanks contain the following instructive sentence: "Your visit to this office will be made more pleasant if you have not eaten for at least two hours." I am quite sure that this sentence has saved my office from hundreds of cases of nausea. All patients who phone for an appointment are similarly instructed. Next, when the patient appears, if it be a lady, she is advised by my assistant of the location of the toilet. If it be a man I instruct him of its location. This has saved many hours time and much embarrassment on the part of the patient. It is a very simple matter to make these two simple precautions a part of your regular office routine. We have no bladder or bowel accidents and no nausea cases other than those of a nervous type, in which nothing is vomited. These suggestions simply prepare the way for good anesthesia. They are old but nevertheless important. The next impressions conveyed to the patient in the way of preparation are mental. Most patients are afraid, some even to the point of hysteria. As soon as my patient is seated I impress upon her or him that Nitrous Oxide and Oxygen are absolutely safe and that there is absolutely no danger—that it will only take a few minutes, unless it requires a longer time

than I expect to do the required work. I firmly believe that patients appreciate truthfulness, and this you can adhere to by refraining from telling them of the exigencies of the case presented. I never attempt to impress upon a patient the difficulty of an extraction beforehand, nor do I ever set a fee for an extraction until it has been accomplished. If you wish to impress upon your patient how skilful and dexterous you are, earn your reputation first. In the matter of citing the fee before the extraction, the patient may prove to be an exception to the method I will give later, and you will regret not having made it larger.

During the time I have been endeavoring to gain my patient's confidence, I have examined the mouth, laid out a program for the extracting, especially where there are several extractions, and selected my instruments. My assistant has the apron and towel on the patient and the machine ready. We have lost no time, for the scope of operation had to be inspected, instruments selected, etc. I have simply talked while I worked and the average patient is in a receptive or at least a "resigned to her fate" frame of mind. Will you not agree with me that this patient is a more likely prospect than the patient who is rushed in, thrown into the chair, fears unallayed and probably advised that she presents a very difficult extraction?

ADMINISTRATION

All patients are started upon pure Nitrous Oxide flowing at the rate of about three gallons per minute and instructed to breathe normally through the nose. If the patient be very nervous the exhaling valve is opened wide for two or three inhalations, then closed to a slight crack. After from five to eight inhalations the respiration will noticeably increase. At this juncture add 7 per cent oxygen, and if your machine provides an emergency Nitrous Oxide outlet, open this for a second or two, then close it and repeat several times. Your mixing bag should be distended about an inch more than it would be if it were filled full without any distension. You are then giving your patient a mixture of 93 per cent Nitrous Oxide and 7 per cent Oxygen and forcing through this mixture Nitrous Oxide flowing at a probable rate of seven or eight pounds. This is continued until the patient is minus any eye reflex. A few openings and closings of the Nitrous emergency flow is usually sufficient, and this valve is closed finally. Your patient continues on the mixture of 93 and 7 at the rate of three gallons per minute. The average patient becomes anesthetized following this procedure in from two to four minutes and it is absolutely surprising the length of many anesthesias without the slightest change of mixture or touch to the machine. Should the patient show symptoms of coming out, the mixture is held and the emergency Nitrous Oxide manipulated as already stated, closed off and we return to the

old original 93 and 7. With as high an admixture of Oxygen as 7 per cent and flowing no faster than three gallons per minute, cyanosis will be an infrequent visitor. My records show that this method of inducing Nitrous Oxid-Oxygen anesthesia is successful in at least 75 per cent of all patients. I shall unquestionably be criticized for wasting time through slow induction, and anticipating this I say that the end justifies the means.

The writer believes that at least 75 per cent of all patients are excellent subjects for Nitrous Oxid-Oxygen anesthesia. He further believes that imperfect, restless, fighting anesthesia is the result of imperfect mental preparation and too rapid induction; the patient is either down too deep or else only partly anesthetized, and in nearly all such cases cyanosis and stertor are present to a marked degree. With a slow induction and administration all of these symptoms can be eliminated or nearly so, that is, in 75 per cent of patients entering your office.

In my practice I am using cheese cloth mouth packs, stuffing in at times as many as six or seven—the more the better. They cut off air entering the mouth and assist in maintaining even anesthesia. These packs are about two and a half inches long by an inch and a half wide, and consist of six layers of gauze cloth. They are tied with a string about eight inches long at one end. When used in sufficient numbers they preclude any possibility of losing a tooth down the throat and absorb practically all of the hemorrhage.

EXCEPTIONS

The writer does not mean to create the impression that all patients will react perfectly to this method of anesthetization. Unfortunately we have among those who must be anesthetized, dope fiends, alcoholics, those with nasal stoppage, where the nasal inhaler is precluded, those who require an admixture of ether, etc., etc. Set dosages and administrative procedures for these types cannot be given, and each case must be more or less a law unto itself. The unfavorable class will probably constitute only 25 per cent of your patients, and I believe considerably less. I have placed my estimate on those who will respond to slow induction low, and my estimate on those who will not respond high in attempt to be conservative. The life of an Exodontist is not always "silver-lined"—he has many daily occurrences and happenings which, could they be eliminated, might tend to increase his allotted number of days upon the earth. It is with this idea in mind—and with a view toward lessening the number of our unsatisfactory anesthesias that this paper is written. Mental and physical preparation and the confidence of the patient in you plus slow induction and administration, holding a set dosage, produce even and lasting anaesthesia.

Oral Surgery Mercy Hospital.

Suggestions to the Chair Assistant

By J. Campbell Thompson, D.D.S., Ashland, Mass.

This little treatise is intended to be of use to the ambitious Dental Office Assistant. It should be considered in no way critical, meaning to be entirely helpful and to answer questions which a conscientious helper, without experience, would wish to ask. Such an assistant, once she has successfully met the requirements, herein only partially covered, should have real pleasure in her work. She will realize hers is a calling of service, even as is that of the dentist she assists, and her value to the dentist, her remuneration, should be entirely in keeping with the importance of her work.

1. *Personal Appearance.* Proper attention should be paid to the dress. A simple white uniform such as the typical Red Cross apron, would be suitable, and the laundering of such would be gladly paid for by the dentist proprietor. If that is not adopted, the choice of dress should be toward conservatism, avoiding extremes in style. Cleanliness, maintained by the daily bath, avoidance of all perfume, and carefulness regarding the condition of the nails and cuticle are of course fundamental. Cheerfulness both as to expression and in the performance of all duties, makes for enjoyment of the work and greater accomplishment. If there is any cause which continues to make an assistant doleful or glum, she should, after due consideration, place the matter before the dentist proprietor and see if the cause of the complaint cannot be removed.

2. *Anticipating Needs.* "He serves doubly well who serves swiftly." It should be the dentist's assistant's duty and pleasure to anticipate all the various needs of the operator in advance. She should keep all receptacles containing medicines, filling materials, cotton rolls, napkins, burs, waxes, and spray bottles filled. In short, everything with which the operator performs his various operations should be at hand, conveniently located, that no loss of time may occur from inability to instantly locate them.

We are all servants, not menials, no matter in what capacity we function. It is the privilege of properly developed, right-minded people to serve, whether in professional life or business. The highest type of individual expects to serve, considers it a duty and a pleasure at the same time.

3. *Attitude Toward Patients.* The dentist's assistant, realizing the success of the office depends upon the return of satisfied patients, will strive, without assuming any attitude of familiarity, to aid the patients in any way within her power. She will not generally speak to the patient, except pleasantly to pass the time of day, unless spoken to, and will scarcely ever enter into conversation that may be indulged in between patient and operator, unless invited.

4. *Hours of Service.* The efficient dental assistant, occupying the important and unique position she does, will expect to have special consideration shown her by her employer when she desires time away from the office. It should be easily possible to satisfy all reasonable desire on her part upon special occasions. On the other hand, her employer being so dependent upon her very helpful efficient office management, she should expect to arrive at the office before her employer or the patient, that she may see if all the work done by janitor or housekeeper has been properly performed and whether the office is in a condition fit for the reception of the most important patient.

At the lunch hour every facility should be afforded the operator, that no interference may come to him because of his assistant's leave of absence. The attitude of carefully planning for the operator's every need, he being virtually like a man tied to his chair, will suggest to the conscientious assistant the things she should do, and she may be sure what she does will not go unnoticed, and in the long run not unrewarded.

5. *Thoroughness.* Dentistry is a very precise calling with an endless amount of detail, all of which makes tremendously interesting but very exacting each part of the work. Everything should be done in the most thorough and pains-taking way, that we may literally be pains-saving. Things that are not done thoroughly at first have to be done over, thus doubling the amount of labor. We cannot be too thorough in our work in dentistry.

6. *Office Department.* In view of what has preceded, this insertion hardly seems necessary; however, lest we in some thoughtless moment might overlook the importance of it, it should be called to mind that loud talking, boisterous laughing, or singing should not be indulged in in the well managed office. Dental patients are usually in a more or less nervous tension, and therefore they are not normal. They are always to be dealt with as patients, which literally means "sick persons—people under the care of a physician."

7. *Compensation.* Is a position as dentist's assistant worth while financially? That depends almost entirely upon the calibre of the assistant herself. If she is content to do only the ordinary duties, she may expect to receive no more than would be required to replace her with an inexperienced young lady, who may easily learn, in the properly arranged office, the mere essentials. On the other hand, an assistant who will meet the requirements as herein set forth, can be assured of a position in almost any large city in the United States, and she can demand nearly what she is worth. There is a financial worthwhile future for the ambitious, efficient assistant.

8. *Expedited Changes.* The prompt changing of patients is a matter of great importance in the proper management of an up-to-date

office. This, of course, should be done without undue haste, without the dropping of instruments, and without allowing the newly-arrived patient to see a badly cluttered and soiled outfit from the previous patient.

How shall we accomplish this? By coming to the chair about ten minutes previous to the time scheduled for the departure of the patient. A certain number of instruments or containers, such as plaster bowl, bottles of medicine, the use of which has been accomplished and that may readily be put in their regular location; also by gathering together even some of the instruments which may yet be needed and placing these on a tray. They are still available to the operator and yet can be readily removed. The record card for the newly arrived patient, also mirror, pliers, and exploring instrument can be placed ready at this time.

As soon as the patient leaves, immediately remove the tip from the saliva ejector, the angular hand-piece or bur left in the handpiece, clear the waste bowl, making certain it is clean, see that the head-rest covers are clean, and that nothing remains on the floor which should be in the waste receptacle.

9. *Sterilizing.* This very necessary but time-consuming duty should be studied constantly with the idea of doing the work thoroughly but with as little lost motion as possible. An electric sterilizer requiring a half minute for ordinary instruments is one great help in this direction. An intelligent and practical use of the electric lathe in cleaning broaches, burs, in polishing instruments, and probably in many other ways, should prove a real time and labor saver.

The prompt return of instruments to their proper places in the cabinet is necessary for the smooth running of every operator's equipment, it not being practicable to have duplicates of every article used.

The assistant should aim to do all this work as expeditiously as carefulness will permit, that she may be available for the very essential help in mixing filling materials, assisting at the chair, etc.

10. *General Management.* The alert assistant should frequently look about the office each day, assuming a critical attitude, with the aim of bettering appearances, keeping shelves clean and orderly, and thereby showing and feeling an interest in the efficient management of the office as a whole.

In closing the day's work, the electricity at the switchboard or other central control should be disconnected, the water in the cuspidor shut off, the cabinet closed and locked, this being a Government requirement if cocaine is stored in the cabinet, the cards and record of the day's work removed, and those for the following day put in their proper place.

Reference has already been made to the case of training an inex-

perienced helper with regard to the care of the instruments and their proper location in the cabinet.

The following is submitted as a thorough, practical working system now in use:

1. Number all drawers in the cabinet, using the Roman numeral system, it being the most adaptable because of ease of marking with stone or sharp pointed instrument.

2. Classify all instruments used for inserting fillings as plastics, and eliminating by grinding with carborundum stone all former markings; note number of drawer at end of handle, and re-number with Roman numeral thus: Instrument No. XIV. Drawer I.

3. Classify operating instruments as chisels (all heavy work instruments) hoes, hatchets, spoons, ligature cutters, plastics. Remove all numbers except one, preferably the ordering number, and scratch the drawer number on end of handle.

4. One drawer can be used to carry practically a complete working set of instruments needed to carry through one patient, including the plastic filling.

5. One or more drawers may be set aside for the less frequently-used instruments, but the marking principle is the same.

6. All rubber-dam clamps have drawer number scratched on them as X, indicating tenth drawer. The same principle applies to every other instrument or article in use, whether scissors, spools, bottles, handpieces, clamp forceps, r. d. punch, etc.

7. Medicine cabinet is likewise numbered as to shelves or drawers, with the addition of the letter C, as C IV. Each bottle is marked showing its location in medicine cabinet.

8. Shelves likewise are indicated as to location, if in sterilizing room or elsewhere, as S. R. upper, S. R. lower, S. R. forward (over wash-bowl), or S. R. left 1, 2, 3, 4, etc.

Some definite means of locating an article should make it a simple matter to put away anything. Articles having a similar use should, so far as practicable, be located in groups.

9. Closets in cabinet are indicated as C. C. right or C. C. left.

The proof of this system lies in the fact that an absolutely inexperienced person may have this system explained in about two minutes, and then may be required to put away a half dozen or more articles, such as a R. D. punch, a bottle of medicine, a pair of pliers, an anvil, a box of cement, and a mixing spatula, and the operator should find all properly placed without any loss of his valuable time.



Fruit and Its Function

By R. A. Kuever, Iowa City



NE of the wise provisions of Nature is to protect the various parts of the human body in a careful and interesting fashion. The eye, for example, is protected by a bony structure practically surrounding it. The heart is not only protected by bony tissue to ward off blows, but by a set of muscles created largely for that purpose. Men who frequently engage in fistic encounters develop these muscles by exercise to withstand the more vigorous blows. The brain is protected by a veritable strong box of bone. So resistant is this box, commonly known as the skull, that it will withstand some surprisingly vigorous blows. It is not an uncommon occurrence for people to fall great distances, lighting on their heads, and yet sustain no permanent injuries. Only recently an unusual case is reported from Merrimac, Alabama. A man, who is at the hospital recovering, was kicked on the head by a mule. The animal was so seriously crippled by the impact that it was immediately shot. This, no doubt, is an extreme case, but it goes to show how well nature does protect.

The most interesting protection, however, nature provides for the body is the fluids which bathe the various parts—the kidneys, the heart, the lungs, the stomach, the bowels, in fact every organ. The teeth, the mucous membrane of the throat, the eye, the vocal cords, and the delicate cells of all the tissues are protected by these ever-present fluids.

Ninety-three per cent of the body is water, of which these protecting fluids are very largely composed. Only traces of proteins and mineral salts are found in them. Nature has provided and arranged this wisely, and these fluids contain precisely what the tissues need to protect and, in many cases, nourish them. Without these fluids the various parts of the body would soon cease to function. With one or more of the constituents missing, their protecting power would be greatly impaired, if not entirely destroyed.

The amount of a given substance is no index of its importance. An example is iron. The average adult body contains from 2.5 to 3.5 grammes of iron—a mere trace compared with the entire weight, yet life would soon cease if the daily assimilation of iron, from 5 to 10 milligrams, should stop. When only a part of this daily iron intake is affected a symptom commonly known as anemia results. Other examples of important substances existing in minute quantities are the hydrochloric acid, 0.3 per cent, in the gastric juice, and the sodium carbonate, 0.25 per cent, in the intestinal juice. In the absence of the hydrochloric acid, the ferment pepsin, which it activates, ceases to function and gastric digestion stops. In the absence of the sodium carbonate intestinal digestion will cease since this alkali is necessary to

activate the fermenters of the pancreatic juice. Without gastric or intestinal digestion food assimilation is impossible and the body will soon starve.

These two very important substances, the hydrochloric acid and the sodium carbonate, are formed from the sodium chloride which is taken with food as a condiment. During the reign of Napoleon it was customary for the French to banish their political prisoners to an island where they were fed foods entirely devoid of salt. It is said that the average length of the life of prisoners so fed was three years.

When these protecting fluids are normal in composition they function as Nature intends they shall, but when they become abnormal they may, entirely or in part, cease to perform their duties. Abnormal secretions may even bring about pathological conditions frequently mistaken for disease and treated as such. Nephritis,—all acidosis for that matter, is an example. The fluids become excessively acidic and set up an irritation. The irritation is not the disease, and a treatment for this symptom will avail nothing. The disease is the cause for the change in the fluid and a treatment which will remove the cause for the excessive acidity will also allay the irritation. It is sometimes very difficult, if not impossible, to ascertain the reason for the change in the composition of the fluid. Fundamentally it is a violation of natural laws. This violation may be unconscious. Many of Nature's laws are broken by present-day modes of living. Baldness is an example. Not until civilization combined the present head gear with our modern diet and the strain of business worries, did baldness exist. Not a single instance of baldness has been found among the uncivilized. However, races previously free from baldness soon accept the fashion of shiny domes as civilization is thrust upon them.

The fluid which has been affected most by the violation of Nature's laws through the process of civilization, is the saliva, and while not generally known, the saliva, next to the blood stream, is the most important fluid. Indirectly more systemic symptoms, commonly called diseases, can be traced to pathological or abnormal saliva than to any other fluid in the body. Dental caries, commonly known as tooth decay, which has increased from 3 to 93 per cent in the past two centuries, is directly traceable to abnormal saliva. Dental caries is a chemico-parasitic phenomenon. Acids formed in the mouth by fermentation attack the inorganic portion of the enamel and destroy it. This inorganic portion is substantially tri-calcium phosphate. The acid formed by fermentation is substantially lactic acid. The lactic acid reacts with the tri-calcium phosphate forming mono- and di-calcium phosphate and calcium lactate. The salts are soluble and this solution, with the removal of the calcium salt from the enamel, is the first step in dental caries. The organic structure of the enamel is collagen.

When the tri-calcium phosphate has been removed by the process just described, the collagen is attacked by a proteolytic ferment, secreted by organisms in the mouth, and is digested and rendered soluble and hence the cavity is formed. These two processes are continuous and simultaneous and extend over varying periods of time. The initial acid attack merely causes a slight roughening on the enamel surface, which makes it easier for subsequent agglutinated food particles to attach themselves. After corrosion once begins, the tooth is soon doomed unless the deposits are constantly wiped off by careful brushing.

If food components are properly proportioned the acid formation is materially reduced and if the oral secretions function as Nature intends, these acids will be instantly neutralized and the attack on the enamel prevented. Present-day diet causes not only excessive masses of agglutinated food particles to cling to tooth surface and ferment into acids, but it reduces the flow and increases the viscosity of the saliva to such an extent that it is entirely unable to cope with the acids that form. This condition is usually spoken of as "acid mouth."

Abnormal saliva is largely the cause of deposits on the teeth. These deposits are at first soft and mucilagenous and are known as mucin plaques. They soon gather up inorganic salts precipitated from abnormal saliva and then harden into what is known as tartar. The tartar produces a seat of gum irritation by getting under the margin. This irritated area forms an excellent mobilizing and multiplying field for the organisms in the mouth and soon develops into pyorrhea. With pyorrhea there is recession of the gums, a very rapid multiplication of not only the micro-organisms, but the pus and toxins they produce. Much of this poison is taken into the system by being swallowed and frequently produces infections of the heart, lungs, kidneys, bladder, stomach, blood stream, etc., etc.

A normal saliva, then, plays a very important part, providing for the welfare of the teeth and mouth and indirectly the entire system. Unfortunately civilization has brought with it a diet which has materially affected the fluids of the mouth—the oral secretions as they are known to the dental profession. The saliva is so changed that it cannot perform the protecting function for which it is intended. Unless a radical change in diet is soon adopted it is reasonable to suppose that the race will be toothless a century or two hence.

Fortunately science is unfolding a simple and pleasant way to overcome this condition, and those who heed as they read may yet be spared the disgrace of a toothless progeny. The gospel of this corrective process in many steps, grouped together under the scientific name of oral hygiene, is being disseminated from many sources. Of these the dentist is perhaps the most authentic and efficacious. However, the school nurse, the municipal and industrial clinics, the child welfare stations,

the physicians, and the manufacturer of dentifrices are all doing their part to acquaint the public with the principles and necessities of oral hygiene. This propaganda has been going on for less than half a century and extensively and intensively only during the last decade. From twenty-five to thirty million people in the United States adhere to the rules of oral hygiene, leaving seventy-five to eighty million still to be reached.

Unfortunately, children, during their first dentition, as well as the first eight to ten years of their second dentition, are most seriously affected. The present-day diet not only changes the composition of the fluid in the mouth so that its protecting power is impaired, but it brings into the oral cavity a food component which is easily changed into destructive acids. This food component is starch, and more particularly the well-cooked or toasted variety, commonly known as pre-hydrolysed starch. Examples of prehydrolysed starch foods are pastry, pancakes, toast, etc. Candy and foods rich in sugar fall in the same group. It must not be supposed that this important carbohydrate group can be eliminated from the daily diet, for it is necessary in a properly nourished body.

The present problem is to reconstruct our diet so that the saliva may perform its function normally. Some foods, particularly those of the carbohydrate group, have a depressing effect upon the oral secretions, making them more viscous and thus impairing their bathing and protecting power. Evidence of this is found in the desire for a drink of water after several pieces of candy have been eaten. Fruits, on the other hand, have a marked stimulating effect upon the oral secretions, making them more fluid and alkaline and increasing their bathing and protecting power. Evidence of this is the large quantity of fluid (alkaline) saliva a taste of orange or lemon produces, and hence the expression, "It makes the mouth water."

A considerable portion of each meal should be fruit, preferably fresh, and if that is not available, preserved fruit should be employed. All meals should be opened and likewise closed with tart fruit products. By opening the meal with fruits the saliva functions normally. By closing the meal with fruit the saliva is left in a normal condition to cope with any acidity which may subsequently form. Food products like toast, pastry, etc., should never be eaten unless accompanied by tart preserves. Jam or jelly on bread is an excellent combination. Bread alone produces an abnormal condition in the mouth, while the presence of the jam or jelly overcomes that. The custom of beginning breakfast with a grape fruit or an orange is an excellent one. It should be extended to the other two meals. However, only one-half of the grape fruit or orange should be eaten before and the other half after the meal.

Apples are an excellent article of diet. Their mild acidity causes

a salivary stimulation which brings about a normal condition in the mouth made abnormal by civilized diet. Grapes or grape products, such as unfermented grape juice, forms an excellent adjunct to the diet. Coffee, tea and cocoa are salivary depressants and have no place in the daily diet, especially if taken during the meal. Lemonade or buttermilk, on the other hand, will aid materially in bringing about a desired and normal condition.

Some fruits stimulate the oral secretions more than others. All fruits stimulate the saliva more or less, and hence all fruit products are valuable additions to the daily diet. The following photographic illustration shows the amount of salivary stimulation the more common fruits produce.



The above photographic illustration shows how fruit juices stimulate salivary flow. Tube No. 191 (left) contains the saliva normally produced in one minute in the mouth of Mr. F—. Tube No. 191 (right) contains the amount of saliva secreted in the same mouth in the same length of time after stimulation by means of lemon juice. Tubes No. 192 (left and right) represent the same condition, excepting in a different mouth with apple juice as the stimulant. Tubes No. 193-193 represent still another mouth and orange juice, while 194-194 show the stimulating power of grape juice, and 195-195 that of pineapple.

Salads, composed of fruit or vegetables, with tart dressings are a necessary component of the meal. The importance of this has heretofore been entirely underestimated. The well-known combination of cakes and syrup, so frequently served at breakfast, is a most impossible combination. The very physiology and chemistry of the mouth indicate that nature never intended such a combination to be put into the oral cavity. In many cases titration shows the saliva distinctly acid two hours after such a breakfast has been eaten. Both syrup and cakes depress the oral secretions very noticeably, so much so, in fact, that a diluent is generally necessary to wash the coagulum down. Cakes, covered with tart preserves, however, produce an entirely different condition, one which is more nearly normal. Roast pork and apple sauce is a well-balanced combination, while thickened gravy on potatoes, and sugar and cream on rice, tapioca or breakfast foods, are distinctly in-

compatibles. A good general rule is to accompany each bit of ordinary food with a bit of tart fruit product, masticating the two thoroughly together. The sanest and soundest dessert is of tart fruit with the demi-tasse entirely eliminated from the menu.

Hyperacidity, gastric indigestion and ulceration is so common with the American race, that it is being referred to as the "American Stomach." Improperly constructed diet, directly, abnormal conditions of the teeth and oral secretions indirectly, have contributed to this extremely prevalent condition of acidosis. A carefully balanced diet will do a great deal to overcome the difficulty, especially those cases which are in the incipient stage. Experiments have proven that the alkaline indices of the secretions of the body can be increased six to eight times by the proper selection of articles of food.

The care of the mouth, including systematic brushing of the teeth, is very important but secondary to the composition of the diet. Teeth should be carefully brushed five times daily—upon rising, after each meal and at bedtime. Before retiring is the most important time to brush the teeth since the interval between this brushing and the one before breakfast is the longest in which any adhering deposits may ferment to form acids. Moreover, during the hours of sleep the flow of saliva is materially diminished and the teeth are deprived of its protecting influence.

The method of brushing is important as well as the selection of a dentifrice. The teeth should be brushed vigorously from the gums to the biting surfaces. The upper teeth, therefore, should be brushed only in a downward direction, while the lower ones are brushed in an upward stroke. In this way gum recession may be prevented. In brushing the upper teeth with an upward stroke and the lower teeth with a downward stroke the gums are brushed away from the enamel margin resulting in recession. Receded gums expose dentin areas which are very susceptible to decay. Under no circumstances should teeth be brushed cross-wise because this type of brushing will produce erosions.

Only dentifrices, either powders or pastes, which are mildly acidic in character, should be used because of the stimulating effect such preparations have on the oral secretions. Tart fruit juice is the most necessary and essential ingredient in a dentifrice. Soaps and other alkalies, so commonly found in the old-time dentifrice, are contraindicated in the mouth. They found their way into dentifrices purely by accident, as history reveals, several centuries before the beginning of the Christian era. Their extensive use during the last century has contributed materially to the alarming increase in dental decay. Soap and alkalies are excellent detergents for the removal of fats and grease deposits and for this purpose largely employed in the laundry and kitchen. The deposits on teeth are albuminous, containing agglutinated

masses of starchy debris and mineral salts. Alkalies will cause these deposits to become more adhesive. Alkalies, moreover, practically inhibit the flow of saliva, at the same time making it very viscous so that its bathing and protecting power is completely lost. Gies, of Columbia, urges the use of vinegar, diluted with water, as a mouth and tooth wash. Pickerill, of Otago, recommends a one per cent solution of potassium bitartrate. The latter would be the equivalent of a bunch or two of grapes, while the diluted vinegar might be compared with an apple so far as the effect on the oral secretions is concerned.

Cancer of the Tongue a Preventable Disease

Joseph C. Bloodgood, M.D., Baltimore, Md.

We all know that the chimney-sweep cancer of the scrotum has disappeared since the human being no longer accompanies the sweep down and up the chimney.

This cancer of the skin of the scrotum was due to long and continuous irritation by dirt.

In a recent reinvestigation of 260 cases of cancer of the tongue, the evidence seems convincing that this cancer is due to long and continuous chronic irritation by tobacco, by repeated burns from smoking, by continuous irritation, or direct wounds of dirty, rough teeth or improperly fitted plates.

In carefully taken histories there is hardly a record of a cancer of the tongue in an individual who has not been warned by definite local lesions which were not cancer, and which have been present months and usually years before the development of cancer.

There is every evidence to conclude that if this information is widely and correctly disseminated, and the public, the medical and dental professions realize that cancer of the tongue is a preventable disease, death from cancer should largely disappear.

My experience with the operative treatment of cancer of the tongue in its *early stage* shows but 62 per cent of five-year cures, and but 12 per cent of five-year cures after the most extensive radical removal of *advanced cancer*.

During a period of thirty-two years (1889 to 1921) there have been 14 per cent (36 cases) of early cancer of the tongue, with 62 per cent five-year cures; 26 per cent (75 cases) of advanced or late cancer of the tongue, with 12 per cent five-year cures; and 18 per cent of inoperable cancers of the tongue, with no cures.

This study which has been carried on continuously since 1910 leads me to the conclusion that more lives can be saved by the education of

the public and the medical and dental professions on the cause and prevention of cancer of the tongue, than by any improvement in surgical technique, or any combination of treatment with the knife, cautery, radium or X-rays.

In my own sphere of educational influence the propaganda of teaching has increased the number of benign precancerous lesions from 3 per cent in the first decade (up to 1900) to 48 per cent in the third decade (1910-1920), and so far in the beginning of the fourth decade (1920-1921) the per cent of benign lesions is 55. There is every reason to believe that these 105 men who have come under observation entirely as the result of the educational propaganda, have been largely protected from cancer. The cause of their local lesion has been removed and they have been informed on the details of oral hygiene for their future protection.

During the same period the per cent of *early cancer* has increased from 3 to 23 per cent, *advanced cancer* has decreased from 48 to 11 per cent, and the *hopeless cancer* from 44 to 11 per cent.

Cancer of the tongue is a disease of men who smoke in excess and carelessly, or who chew tobacco constantly and, in addition, neglect the teeth.

Warnings. The most common warning is *leucoplakia*, single, multiple patches, or diffuse white patches in the mouth. The individual is always aware of them, usually for years before cancer develops. The treatment is to remove the cause—the use of tobacco in all forms should cease at once, the teeth should be put and kept in perfect order. It may require three or four years for the leucoplakia to disappear.

The second most common warning is a local area of irritation adjoining ragged, dirty teeth. Tobacco should be discontinued, and the teeth put and kept in perfect order.

Syphilis, as an etiological factor, has been exaggerated. If there is a history of syphilis and a positive Wassermann, specific treatment should be promptly administered, but subsequent development of cancer will not be prevented by this treatment alone. The causes—tobacco and dirty, rough teeth must be eliminated at once.

Local treatment of leucoplakia or of the area of irritation by radium, X-ray or any irritating caustic, is contraindicated. The cause must be removed first; then if the local lesion, except leucoplakia, does not rapidly disappear, it should be excised with a good margin of healthy tissue with the cautery. *Do not excise a piece for diagnosis.* Remove the area with such a good margin of healthy tissue that if the microscope reveals early carcinoma there will be no indication for further local operation.

The prevention of death from cancer of the tongue depends upon these simple instructions in oral hygiene.

The result of this investigation appears to me so important that I feel justified that they should be published in this letter to the Journal of the American Medical Association before the completed article with all its details and illustrations is published.

904 N. Charles St.

A Case History

I enclose jaw plate and films of a case similar to the one illustrated by Dr. H. Howard Powers in July Digest.



Patient, male, 21, struck with fist at right angle. Mandible fractured on left side between the bicuspids and on the right, where the blow was delivered, mesial to the impaction.

Marked displacement upon left side only.

HARRY J. FIELD.



Polishing of Vulcanizing Plates

By Meyer Segal, D.D.S., Detroit, Mich.

 HE contact of the tongue with an uneven surface causes much discomfort. For this and many other obvious reasons a pleasing polish on vulcanite plates is always appreciated by patients. Before a vulcanite plate may be considered complete and well made, it is most desirable that it possess perfectly smooth surfaces and a permanent pleasing gloss.

In describing the process of plate polishing, it is assumed that the plate has been properly sanded and chiseled.

Without proper equipment it is not possible to do successful plate polishing. Following is a list of equipment that is necessary:

- Large cotton buffers, 1½ in. wide, 5 in. diameter
- Small cotton buffers, 1 in. wide, 3 in. in diameter
- Small felt cones
- Four-row brush wheels
- One-row brush wheels
- Cup-shaped brush wheels
- Pumice, tripoli, gold dust, whiting, gold rouge
- A powerful electric motor.

As the same principles are involved in polishing all classes of vulcanite plates, it will suffice to give only a description of the polishing of a full upper plate. Plate polishing may be divided into four processes.

FIRST PROCESS

With the large buffer and the free use of pumice mixed to about the consistency of correctly mixed plaster, all scratches are removed from the gum portion of the plate. The margins are then gone over with the same buffer and pumice. The polishing of the palatal surface is now undertaken. At first the large buffer should be used on all surfaces that it can reach. This buffer does not reach into the deeper portions of the palate. These may be reached with the small buffer. Some plates have especially deep vaults, and it is found impossible to reach the deepest portion of the vault even with the small buffer. Upon such surfaces a small cone and pumice is used. A cup-shaped brush wheel is made to strike the deepest portion of the palate in a direction at right angles to that taken by the felt cones. At this stage the scratches just lingual to the six anterior teeth are conveniently removed with the cup-shaped brush wheel and the free use of pumice. In all plate polishing operations, the plate must be kept moving at all times, for, to permit a buffer or wheel to play upon one spot too long is conducive to overheating and possible warping. The liability of producing a hole in the plate is very much augmented.

SECOND PROCESS

The next parts of the plate that require attention are the inter-spaces. These are best reached with a four-row brush wheel. Upon the labial and buccal interspaces the wheel should run occluso-gingivally and the plate held so that the brush wheel moves through the inter-spaces at an angle of about 45 degrees. The lingual inter-spaces are also brushed with the four-row brush wheel. The plate should be held so that the brush wheel strikes the lingual inter-spaces first linguobuccally then bucco-lingually. Scratches just lingual to the six anterior teeth are best reached with a cup-shaped wheel, as already described. A single-row brush wheel used so that it strikes the porcelain first and glances off to the vulcanite is very useful here, especially in the place of difficult access just lingual to the cuspids. All pumice upon the plate is now removed with brush and cold water.

THIRD PROCESS

All surfaces of the plate, including the margins, are now gone over with a small buffer charged with tripoli. This process removes the fine lines left by the pumice and shows up very clearly any scratches that may still remain. If scratches are visible they should be removed with pumice, using either buffer or brush wheel, depending upon location. Any attempt to remove scratches with the tripoli should be avoided, as it produces considerable heat and is liable to warp the plate at this stage. The plate should now be thoroughly washed with warm water and soap, or better still, Gold Dust, using a long stiff brush. All tripoli and pumice that may still remain on the plate must be removed before the final polishing is attempted. The plate is now ready to receive the final polish.

FOURTH PROCESS

For this purpose a clean cotton buffer $\frac{3}{4}$ -inch wide and 5 inches in diameter, and a smaller buffer, $\frac{5}{8}$ -inch wide and 3 inches in diameter are used. To obtain the proper size it is necessary to cut off from the sides of the large and small buffer used in other processes. The threads should be removed, except those nearest the hub, from all buffers used in the final polishing and the third process. The plate is covered with whiting mixed to about a creamy consistency, and with the larger buffer lightly charged with tripoli the plate is pressed against the revolving buffer, quite heavily at first, and then lightly. The plate must be turned at different angles. This must be continued until a high polish is secured. The margins of the plate should not be overlooked. For the palate portion it is necessary to have resort to the smaller buffer. Clasps, lingual bars, and other metallic parts upon vulcanite plates are polished by covering heavily with whiting and polishing upon a convenient buffer charged with gold rouge. The presence of rouge

upon the buffer is not at all harmful to vulcanite polishing. The vulcanite of the plate should be polished before the metal parts. All whiting and rouge upon the plate must now be removed. The occlusal surfaces of the teeth are washed with cold water by striking with the brush vertically, the interspaces, with an up and down motion. Running water is preferable for this purpose. The maxillary surface should not be overlooked. There is no necessity for drying with a soft cloth. This completes the polishing. If every step has been closely followed, the plate should present a perfectly smooth surface, a permanent polish and a pleasing appearance.

Just Like That!

By C—W. A.

(WITH APOLOGIES TO THE PSALM OF LIFE)

Lives of great men all remind us
Honest toil can have no chance;
The more we work we leave behind us
Bigger patches on our pants.

On our pants—once new and classy—
Now are shades of different hue,
All because our patients linger
And don't pay us what is due.

Let us then be up and doing,
And get these mites however small,
Or when winter's winds do smite us
We will have no pants at all!

Success

By Sam Hechter

(Read in the Theses and Seminar Course of the College of Dentistry, University of Minnesota.)

Is there some fundamental principle that may be employed to gain success? Can anyone tell us what we must do or what we must not do in order to succeed? In every line of endeavor, we see men rising and succeeding in spite of most unpromising beginnings, and we see failures where only brilliant successes had been predicted. We wonder and ask why is this—what is the secret of success? But first let us ask what is success?

Everyone has two callings. One is the art, or profession, or whatever work one does which gives him a living and provides for his wants; the other, the highest call which comes to every human being, is first to be a man, not merely a great doctor, merchant or dentist. No one who is really ambitious and desirous of making a success in life can afford to make his work the exclusive aim of his efforts.

Rousseau said, "Whoever is well educated to discharge the duty of a man cannot be badly prepared to fill any of the offices that have a relation to him. It matters little to me whether my pupil be designed for the army, the pulpit or the bar. To live is the profession I would teach him. When I have done with him, it is true he will be neither a soldier, lawyer nor a divine. Let him first be a man. Fortune may remove him from one rank to another, as she pleases, he will always be found in his place." First be a man and then no matter what your profession is, your real worth will make itself felt. If you are not a man no culture, no training, no trick of manner can conceal that fact, at least for very long.

Everything we live for is so dependent on good health that it becomes our first duty, especially as guardians of health, to keep ourselves in a superb physical condition. Keeping physically fit to do the greatest thing we are capable of doing becomes one of the very important success commandments. No kind of achievement is equal to perfect health. Most of the prizes of life fall to the strong, vigorous men and women who back their brains with capacious lung power and fine physical stamina. Nothing else can take the place of these success factors. Breeding cannot, talent cannot, education cannot. Weakness of any kind cripples you, puts you at a great disadvantage.

The power of every success asset is multiplied by every bit of improvement or increase in physical health, because robust health means the intensification and strengthening of all the mental faculties. Success in rising above failures and disappointments, in overcoming obstacles, depends very largely upon the physical reserves, the plus vitality. It is not enough to be merely well; we must have abounding health;

we must have sufficient reserve power to carry us safely through the critical places, the emergencies which will confront us all through our career.

What we are capable of accomplishing depends very largely upon what we think of ourselves, upon the estimate we put on our ability. When the physical thermometer is low, when the health needs bracing, courage and confidence wane, doubts arise, worry, fear, and anxiety begin to haunt us.

To brace up the health and improve the physical condition we must carefully select our diet, eat the proper kind and proper amount of food, and we must also get the right kind of physical exercise and training. But all that is not enough. To get the best results, it is absolutely necessary that the mind work in harmony with the body. If we want health, we must believe in the possibility of our health, we must expect it, we must believe we were made to be healthy and strong. Instead of visualizing and asserting health, how many people do just the opposite. They constantly talk and think of their poor health, look as though they believed they never would get well. No matter how perfect their physical surroundings or how scientifically they treat their body, these people will never be healthy until they change their thought. The habit of always holding a high ideal of our health, of visualizing ourselves as always well and strong goes far in building up a barrier between us and all our physical ailments.

Many regard success as a mysterious, indefinable something that lies a long way ahead of us, well nigh impossible to reach. We do not seem to think that each day will have any great modifying influence upon the entire life, or the destiny as a whole. Most people seemingly think that their life's achievement is a sort of predetermined thing, and that if there is any success for them it is always in the future. We must carry our success in our minds or we will never find it. If we adjust ourselves to the condition of our lives, while trying to better them, instead of grumbling and finding fault, we have a great secret of success.

Many people who make a fizzle of life do well enough part of the time when everything goes smoothly, when there is nothing to ruffle or inconvenience them. But on days when things are not at their best, the quality of their work drops down and the life average is very low. It is the poor slipshod work we do when our standards are down that demoralizes our ideals and weakens our characters.

No matter how discouraged or how blue you feel, never allow yourself to do a poor, slovenly job, or to drop your efficiency standards. Whatever you attempt to do, keep the quality of your work up. Do your best even when you don't feel like it. No matter what happens or does not happen, what comes or does not come, resolve that you will

extract from every experience of the day something of good, something that will make you wiser and show you how to make fewer mistakes tomorrow. Resolve every day to begin a new life, to forget everything in the past that caused you pain, grief or discouragement. The only possible way in which any human being can get anything out of this life worth while is by forgetting the past and flinging his very soul into the doing of the present duty. The opportunity is not in the wreckage of the past, but in the potency of the passing moment. Seize the instant as it passes and wring from it every possibility.

There are a large number of people—usually those who are not making much money—constantly in search of new fields. They are simply poor, ignorant beings who imagine themselves unhappy where they are and vaguely feel that elsewhere there is something that will bring them more comfort, more pleasure and success. They are too blind to see the beauty that surrounds them at home, too heedless to appreciate the value of their own friends. They always want something they haven't got and remain forever dissatisfied and disappointed.

There are others who are active, doing things in the world—yes, real useful work. Few of them are using their powers in any conscious spirit of unselfishness. They think they are working solely for themselves. They may be piling up fortunes for themselves and their children. Fortunes are good and useful if they be not too great. When one has money enough to build himself a comfortable home with somewhat of beauty about it, when he has money enough to send his children to be educated, he may regard himself fortunate.

Many gradually begin to amass a fortune which grows and demands more and more attention. Soon this fortune may become huge, but strangely enough instead of serving the man, the man continues to spend all his energies serving his fortune. It can bring him no real good. It can only bring serious danger and trouble to all his fellows in the world. And in spite of this truth many continue to worship the idea of success embodied in the thought of only making much money.

The success of any man's life is more to be measured by what life has made of him than by what he has accumulated in his lifetime. We ask "How much money has he?" That is important as indicating in some degree the powers of the man, but it may sometimes tell a tale of oppression and dishonesty and greed and shame. We ought to ask, "What has life made of him? Has he clear vision to see the beautiful world and all the good in it? Has he made of himself a being worthy of the world in which he lives? Is he strong and clean and manly and fearless? Is he loved and esteemed and respected by those who know him?"

If he is that—then no matter how little of material things he has accumulated—that man has made a success of life.

The Porcelain Jacket Crown

This article was prepared by an expert Ceramist in order that dentists who desire to adopt the use of porcelain jacket crowns might have a definite, proven technic to follow.

It is suggested, however, that before undertaking such work, a little observation of the actual technic should prove helpful.—
(EDITOR.)

The progressive dentist who fails to realize right now that he should forge ahead with an accurate knowledge of all that means progress in the practice of modern dentistry, cannot hope to keep pace with the demands of his profession. At no time in the history of the practice of dentistry has the demand for superior professional skill been so great.

THE PORCELAIN JACKET CROWN and its possibilities open an avenue of mouth correction, that in many instances a transformation is effected, so surprisingly beautiful, that nature is almost challenged.

It is difficult to anticipate with any degree of accuracy the extensive field the application of the crown is designed to cover. It is not only useful for single teeth but to correct irregularities such as rotation, protrusion, separation, regression, and every condition of tooth deformity and to raise or change the bite.

In the hands of the skilled Ceramist the PORCELAIN JACKET CROWN can be so formed as to possess every characteristic of the natural tooth. Surface, spacing, shading, individual lines, grooves or ridges, peculiarity of contact or occlusion. Ceramic skill is developed only through years of constant application in the mixing, moulding, and melting of porcelain. It would be unreasonable to assume that the busy practitioner, after trying work at the chair, could enter his laboratory and do justice to the skill essential in successful ceramic effort.

Advanced methods of PORCELAIN JACKET CROWN construction involve an indirect method. Therefore, through the skilled Ceramist, it is possible for any dentist anywhere, to obtain the highest attainment of the application of the PORCELAIN JACKET CROWN.

This article is designed to give the practitioner a knowledge of the indirect method, which is not only authoritative, but the most specific, helpful, and easily understood of any method heretofore offered the profession. Obsolete methods, involving different types of construction, all of them seriously faulty, are purposely eliminated as being unworthy in present day porcelain application. The indirect method does away with the use of the facing, the half jacket, the platinum coping and every condition of PORCELAIN JACKET CROWN construction which compels metal contact with the tissues.

The practitioner who anticipates jacket crown application, should thoroughly master the indirect method in its simplicity. A perfect

understanding of the application of the single PORCELAIN JACKET CROWN, constitutes the basis for its most extensive application. There are two elements in PORCELAIN JACKET CROWN construction. One operative, the other ceramic. We will eliminate entirely the ceramic feature, for the reason that comparatively few practitioners can devote the time necessary to become proficient in the exacting conditions necessary to become a successful porcelain worker.

Any Laboratory specializing in Ceramic dentistry excels in its results only, when supplied with impressions and models representing exact conditions. No member of the profession nor Ceramic Laboratory should minimize the difficulty the practitioner will experience in obtaining the ideal tooth preparation or exact impressions. Only through care, patience, perseverance and skill, can conditions even approximating the ideal be obtained.

The expert Ceramist in order to complete a crown requires two band impressions, a pink paraffine wax partial, and a pink paraffine wax bite. He also will ask you to supply him with a shade tooth from any of the standard tooth shade guides. These requirements are indispensable and the crown could not be completed without them.

This, then, means:

First—A certain tooth preparation is necessary, and, therefore, we ought to have an intelligent understanding of what the ideal preparation should be, and the relation it bears to the *completed* crown.

Second—We ought to know what constitutes a good band impression and its relation to the perfect *fitting* crown.

Third—We ought to know what constitutes a suitable partial impression and its importance to the perfectly *aligned* crown.

Fourth—We ought to know the importance of the bite impression and its relation to the perfectly *occluding* crown.

In order that each of these vital requirements may be perfectly understood, let us take them in order:

TOOTH PREPARATION

So much has been written and said on this subject, and for the reason that there is so great diversity of opinion as to the preparation that could be selected as ideal, we will pass this subject and center our minds on a prepared tooth form, designed to include a shelf or shoulder, and a form from which the band impression, the paraffine partial impression and the paraffine bite impression can be removed without any fear of distortion. This condition must exist in the preparation, otherwise the completed crown will prove unsatisfactory.

What is meant by the shelf or shoulder? Imagine if you will, the possibility of a very small wheel being run all the way around a lateral or any other tooth, and this wheel cut into the tooth just under the

free margins of the gum, and to a depth only, of the thickness of the enamel—and then, could, with your fingers, withdraw all of the enamel off the tooth, leaving the dentin intact, you would have an *ideal shelf or shoulder*. This crude reference is given simply to bring out the necessity of somehow, developing a shoulder that *extends all the way around the tooth, of equal thickness, and in an unbroken line*.

Keeping in mind this shoulder, and all the enamel removed from the tooth, sufficient dentin must be removed to leave a core that converges slightly from the inside margin of the shelf or shoulder, towards the cutting edge. The amount of dentin necessary to remove is governed by the tooth to be crowned—never, however, remove any more tooth structure than is absolutely necessary. Now, keeping the converging core form in our minds, we will clearly understand that the band, partial and bite impressions, *will* come away from the core without any condition of drawing. Still keeping the converging form in our minds, and its very great bearing on the perfect jacket, we will realize that every condition of *bulging—undercuts—roughness or cavities must be eliminated*. If this converging form is not obtained, neither band, partial nor bite could be removed without distortion. Undercuts and cavities can be taken care of, by filling with permanent or temporary material, while bulging and roughness can be eliminated with disk or stone. It might be well to say here that we will next touch on the band impression and after doing so, we will all realize the very great importance of a tooth form that admits of impressions that are not drawn, and the very great reason for laying so much stress on the importance of the *shelf or shoulder, the gradual converging condition, and the elimination of all cavities, undercuts, roughness and bulging condition*.

THE BAND IMPRESSION

Undoubtedly more Jacket Crown failures are experienced because of a poor band impression, than from any other cause. The band should be made from sheet copper, gauge 36, and should rarely be less than one-half inch in length. The fitting and contouring requires as great care as is exercised when making a band for a Richmond, or any other type of banded crown. There is just this difference—the completed band, must not fit too tight, nor should it be too loose—it *must under no condition scrape the root*. A slight space between the root and that part of the band which must go *under* the gum is essential in every well-fitted band. This band should be placed up *over* the core, *over* the shoulder line, and slightly *under* the gum. Do this twice or three times before attempting the impression. If the band be a trifle too tight, it may be relieved by filing.

When trying the band, the vision is not obscured, and one can see plainly, when the band does go where it properly belongs, and gives the operator desirable experience when actually taking the impression.

Now we are ready to take an impression; one that means success or failure in the fit of the crown.

Place warm modelling compound in the band—say two-thirds full, place band in position and with gentle, though determined pressure, force it as nearly as possible to the location it occupied when using the band empty. Under the pressure, there may be some excess modelling compound forced out at the gum line, if so, you will have used a little more compound than necessary—chill case, and remove it. All overlapping compound should be removed from the band, and the band again warmed. Now proceed as before and when it can be clearly seen that the band *does* actually go *under* the gum as it did when no compound was used, and reasonable pressure has been exerted, the band can be chilled and removed. The perfect band impression does not show any compound outside the band proper.

Now, before laying the band aside, take it to good light, look down into it, and ask yourself this question: *Can I, or can I not, see the shelf or shoulder line, that I worked so desperately to secure, showing plainly inside the band—and does it show distinctly all the way around, and in an unbroken line?* Also, can I see plainly a slight overlap of compound beyond the shoulder line?

This slight overlap of compound represents the minute space between root and band, and is exceedingly important. Why—because if the band scrapes the root, there can be no overlap. If there is no overlap of modelling compound, the amalgam die, while it would show an *imprint* of the root periphery, the surplus amalgam could not be ground away by the Ceramist without encroaching upon the root line, thus absolutely destroying the fit of the crown at the edges—therefore, the necessity of not only the shelf or shoulder showing inside the band impression clearly, but the *vital* necessity of the slight modelling compound overlap.

Do not use a short band—it is very trying to handle in the mouth; also avoid using any form of cup or thimble; the band should always be open at both ends.

Before passing to the next requirement, we realize the importance of the band impression and the fact that *a perfect fitting crown could not possibly be made from an imperfect band impression.* A Jacket Crown never should be permanently cemented into position, unless there is perfect continuity between root and crown. This important condition may easily be determined by the dentist.

The Ceramist with a carborundum stone grinds off the surplus amalgam. When grinding the good die, he can do so with impunity,

and with absolutely no danger of allowing the stone to touch the shoulder margins all of which show clearly in the die.

If the Ceramist were to attempt grinding the poor amalgam die, he would be successful only, where the shoulder shows definitely. If he continued his grinding, he would be merely guessing at the shoulder line, and such a procedure would not do. Therefore, let us understand clearly, that the overlapping amalgam beyond the real shoulder in the die, is an absolute necessity, and that this overlapping amalgam represents the slight space in between the band and root, where the band goes under the gum. When this excess amalgam is ground away, the Ceramist has, to all intents and purposes, an extracted tooth in his fingers, prepared for a PORCELAIN JACKET CROWN. From this perfect amalgam die, the expert Ceramist can build a PORCELAIN JACKET CROWN, that in every instance will fit, and fit perfectly.

THE PARTIAL IMPRESSION

Here is another requirement of equal importance. Comparatively few practitioners realize the vital importance of a most carefully taken partial, and the relation it bears to the perfectly built or perfectly aligned jacket crown. Extra tough pink paraffine wax should be used in a tray. *Never attempt the partial using bees-wax or modelling compound.* Bees-wax is entirely too soft, while modelling compound is altogether too hard. The partial impression should take in several teeth on either side of the tooth to be crowned, where possible. In the instance of a right lateral, the partial should include the left lateral. The reason for this is obvious. The partial impression should be taken using sufficient pressure so that a definite imprint of the shelf or shoulder can be clearly seen in the wax. Unless this shelf does show in the partial, it would be difficult, next to impossible, for the Ceramist to invert his amalgam tooth in the partial, and place it where it properly belongs. If he fails to place the amalgam die where it properly belongs and proceeds with the case, the completed crown will be built out of alignment with the other teeth. Because of this, the dentist should use very great care in securing the best possible partial impression.

THE BITE IMPRESSION

Here also is another impression which must be very carefully taken. A generous amount of extra tough pink paraffine wax should be used, and while the wax is soft, with your finger, force it well up around the tissues, especially in the area of the tooth to be crowned. In the instance of a posterior tooth, a most carefully taken bite impression is an absolute necessity, and it is recommended that any apparatus be employed that will prevent too much spreading of the wax while the teeth are being brought together. An important suggestion is in order

here: After taking the bite impression, hold it up to the light, and look through it. Many dentists do not allow sufficient space on the morsal surface for thickness of porcelain. There should never be less space for porcelain than one millimeter. If the articulation shows a less amount of space, the jacket crown might become fractured through the force of mastication. This impression, like the partial, should show a shelf or shoulder. In the case of a posterior jacket, the die must be placed in the wax with equal precision, and if the shoulder does not show in the wax bite, it would be difficult for any Ceramist to place the die into its correct location, and, as aforesaid, unless the die is placed where it rightfully belongs, the crown would of necessity be built out of true alignment with the other teeth. The occlusion would also be effected in consequence.

We have not forgotten the exact requirements—two band impressions of each case, one pink partial, and one pink bite. The importance of each of these impressions has been entered into, in a very clear and concise manner, so that the dentist will undoubtedly now possess an intelligent understanding of the method, and the laboratory requirements, sufficient to enable him to proceed, and with comparatively few failures.

COLOR SELECTION

Color selection is made using any standard tooth shade guide. The "matching" of the shade, and the selection of the shade guide tooth must be made before any preparation of the tooth is attempted. In instances where the teeth are quite uniform in shade, and with comparatively little variation, quite some experience and skill are necessary in making a close selection. The "single shade" tooth is the most difficult. In instances where there exists a distinct tip shade, and an entirely different color at the neck, an excellent color selection is not so difficult. Ordinarily, the dentist has comparatively little difficulty in making a good selection from some of the Standard Tooth Shade Guides, and it is recommended that for this special purpose, if for no other, that all of the standard guides are at hand. The expert Ceramist is familiar with practically all of the blends used in the manufacture of artificial teeth, and is quite able to duplicate any of them regularly. If it is impossible to secure the right selection, from any of the guides, a practical suggestion to make in this important element of the work and with which many dentists have experienced highly satisfactory results, is as follows:

Let the dentist stand with his back to the window where the best possible light conditions exist. With the patient standing directly in front of him, let the lip come down and cover the teeth, with the exception of the incisal third. The patient should keep wetting the teeth every two or three moments while the dentist is endeavoring by

slowly turning the head from right to left, and up and down, to determine an exact *tip* shade. This is the most difficult of any section of the tooth for the reason it represents practically the labial and lingual plates of enamel only, and is, therefore, almost transparent. All of the standard tooth shade guides may have to be employed before a correct tip shade is secured. Do not pass color selection of the tip until you are reasonably sure you have obtained the best, or the closest "match."

Next center your color selection efforts on the gingival third of the tooth. This shade is seldom very difficult to obtain. The various yellows include shades from the light or corn yellow to the heavy shades of yellow, brown, gray, green, and their various blended conditions. Ordinarily, the dentist who can be successful in selecting first a proper tip shade, and second, a satisfactory neck shade, will generally receive from the Ceramist a highly satisfactory blended condition in the jacket crown.

In the hands of the skilled Ceramist, the centre of the tooth is along the shade of the tip, but quite naturally, more dense. Its appearance of density is due to the increasing thickness or bulk of dentin, and the Ceramist can, very easily, strengthen his tip shade to harmonize with the color condition of the center of the tooth.

Articles on color selection have at times appeared in the different dental publications, all of them more or less confusing, and of little practical assistance to the dentist. It would seem that in making color selection, the tooth may be mentally divided into three sections—*the tip—the neck—and the center*. The tip, as before explained, requires the most careful consideration—the neck next of importance, but not a difficult matter, while the center, unless there is some marked difference in shade when compared with the tip, can always be duplicated by the Ceramist.

THE FIRST JACKET CROWN CASE

When attempting his first jacket crown case, the dentist should select a desirable patient and a most favorable location.

By desirable patient is meant, one who is not nervous, and knows and appreciates what dental work is, and who would not become seriously annoyed if the first attempt were unsuccessful, and willing to have the dentist continue his efforts.

A favorable case means the selection of a tooth in the front part of the mouth, preferably an upper central, lateral or cuspid. In these instances the vision is not obscured, and access not exceedingly difficult.

If the tooth has been devitalized the case is all the more favorable. Never, however, devitalize a tooth you are going to jacket unless absolute necessity compels. If devitalization has been effected, it ought to

be clearly understood that because of this condition the tooth should never be reduced more than is necessary.

The mission of the PORCELAIN JACKET CROWN is to preserve tooth structure, and its application should *never* involve over reduction of tooth substance. Furthermore, it ought to be understood that a PORCELAIN JACKET CROWN built heavy and thick at the expense of tooth structure, is entirely, impractical. Over-reduction may result in a fractured tooth in a very short length of time.

The PORCELAIN JACKET CROWN is a veneer crown and when built in this condition, its life or permanency is superior to the heavily built jacket.

The *shelf* or *shoulder*, the very basis of the successful jacket should never be less than the thickness of the enamel at the gum line. From this shelf or shoulder, there is a slight, though gradual increase in the thickness of the crown, due quite naturally, to the converging form of the prepared tooth. The PORCELAIN JACKET CROWN, however, derives its very great strength and permanency from this all important shelf or shoulder which must be cut into the tooth just under the free margin of the gum, and it should extend all the way around the tooth and in an unbroken line.

THE JACKET CROWN WITH DUMMY ATTACHMENT

While it is always *possible* to add a dummy to the jacket crown, it is seldom practical. It should never be attempted only in the most favorable location, and under most favorable conditions. The trained Ceramist will not proceed with such a case unless his model shows very plainly that the case *is* practical.

Generally speaking, it is asking too much of the veneer crown to stand the strain of continued mastication. The PORCELAIN JACKET CROWN is only a structure of frail porcelain, and alone, possesses very little strength. When, however, it perfectly fits the prepared core, and there is no condition of rotating, and the shoulder margins accurately met in the fit of the crown, and then this crown properly cemented into position, it *does* possess very great strength and permanency, and meets every reasonable requirement.

POSTERIOR JACKET CROWNS

The PORCELAIN JACKET CROWN is equally desirable in posterior locations. It would seem that this crown marks the solution of the badly broken down bicuspid and molar. Ofttimes, these teeth can be partly restored with gold, cement or amalgam, and then ground as for the jacket crown.

Again, the cast gold core method may be employed. This method means that with the tooth squared off at the gum line, iridio-platinum pins are inserted into the canal, or canals, and casting wax added in the

size and form of the core desired. This piece is then removed, and cast. The wax should be brought out close to the root line, but of course, space must be left for the necessary shelf or shoulder. In such application, countersinking the canal is recommended. It accomplished desirable anchorage for the cast core.

After the casting process, this core is permanently cemented into position, when the dentist can proceed as with the regular jacket application. Never proceed with the impressions without the cast core being permanently cemented into position.

SPECIAL BITE CASES

Occasionally a case comes to hand where both teeth adjacent to the tooth to be crowned *lean* toward each other at the cutting edge, thus partly closing the space. This condition prevents a good partial and bite, and a drawn condition is the result. Were the Ceramist to proceed with a perfect band impression, and *drawn* wax impressions, while the crown would fit perfectly, the form and alignment would be developed through guess work only, because of the drawn condition of the partial and bite. Should this condition exist it is suggested, that a second band impression be taken. Before removing this second band impression, have ready a partial impression tray filled with warm modelling compound, and take this second partial impression with the band impression in position. In such an instance *only* should modelling compound be used as a partial impression material.

CEMENTATION

Unquestionably, the use of a reliable oxyphosphate cement must be strongly recommended. Some dentists claim great satisfaction through the use of Silicate and Synthetic cements. It would seem, however, that their lack of adhesive quality in any marked degree, would render them doubtful for practical use, and caution is advised.

Extreme care is urged in the color of the cement employed. A good rule, is to use a cement powder lighter in shade than the lightest section, or tip of the jacket. Whether or not the blend of the crown will be affected by the shade of cement used, may be definitely determined by mixing the cement powder with water, and trying the case in this condition. If the shade of the cement mixed with water does not affect the blend of the crown, that particular shade of cement is the proper one to use in the permanent cementing process. Cement powder when mixed with water does not possess any adhesive condition, and it can be easily and cleanly washed away from both tooth and crown, and the permanent cementation takes place immediately.



Dental Anomalies

These evidences of Nature's departure from her usual paths have been sent to THE DENTAL DIGEST in answer to a request which was made in the April issue. They are interesting as "freaks" and show, in many cases, why root-canal treatment is not always successful or possible. We thank all who have taken the trouble to place these anomalies at our disposal, which we will print from time to time, and trust our readers will be able to take from them such information as they may contain for them.



DR. W. COLLINS
Tipton, Indiana



DR. A. J. CASFORD
Tonkawa, Okla.



DR. R. C. MOUNTS
Youngstown, Ohio



DR. JOSEPH AXELROD
New York



DR. A. STERN
Johnstown, Pa.

DENTAL LAWS

Examination Acts in U. S. of America

By Alphonso Irwin, D.D.S., Camden, N. J.

CODIFICATION

(Continued from August)

MISSOURI—LAW 1917

Section 5487. *Board to grant Certificates to whom—Examinations, etc.*—From and after the passage of this act it shall be unlawful for any person to practice dentistry in the state of Missouri or to attempt, or to hold himself or herself out as a dentist until said person or persons shall first comply with the following requirements: Be examined and registered by said Board, and after receiving a certificate of registration the person receiving the same shall file such certificate of registration with the clerk of the county court of the county or counties in which he or she resides or desires to practice dentistry, and shall have the same recorded and a certificate showing the filing and recording of the same, with the book and page where recorded endorsed thereon under the hand of the clerk and the seal of said court; and thereafter any such person shall apply to and receive a license from said Board, which license shall attest the qualifications of the person named therein and shall give the person named therein the right to practice dentistry for the term mentioned in said license, which term in all cases shall end on the 30th day of November of each year, and shall be dated on the date such license is issued; and any such person shall, before attempting to practice dentistry or before holding himself or herself out as a practicing dentist, have a name plate prepared and placed in a conspicuous place upon the outer door of the office wherein the licensee practices or offers to practice dentistry, which name plate shall be in plain English letters giving the name of the licensee as it is written in said certificate of registration and license; the letters on said plate shall not be less than two (2) inches high. Any person attempting to practice dentistry, or holding himself or herself out to the public as a practicing dentist before complying with each of the provisions herein named, shall be, upon conviction, adjudged guilty of a misdemeanor and punished as hereinafter provided. All applications for registration shall be made to said Board in writing, signed by the applicant upon blanks prepared and furnished by said Board, and among other things shall state his or her correct name, age, place

of residence, color and nationality, the name of the school or schools attended by the applicant, the date of such attendance, and whether applicant is graduated from there, and if graduated, the name and address of the school and the date of graduation. Each applicant shall remit a fee of twenty-five dollars (\$25.00) with his or her application. Each applicant must be at least twenty-one years of age, of good moral character and reputation, and must show that he or she is a graduate, and has a diploma from a reputable dental college, or the dental department of some reputable school or university which maintains a required course of study equal to that required under this act, or shall show that the applicant has a license to practice dentistry from another state in force at the date of such examination, provided such applicant has entrance credits or credentials for his entrance in such school or college equal to those required by this state at the time said applicant entered his dental school or college, and such other information as the Board may require. Said Dental Board shall be authorized and empowered to appoint entrance examiners, whose duties it shall be to ascertain and determine by proper examination of credentials or certificates of preparation and qualification presented by such applicants, and where the applicant does not present such certificates of standing said entrance examiners shall be empowered to examine such applicants as to their literary qualifications required for entrance into any dental college or school in the state of Missouri. The method of examination for requirements for entrance shall from time to time be determined by said Board. Should any applicant for entrance misrepresent his actual credits to which he or she may be entitled, or shall receive any certificate which is a mis-statement as to his or her actual literary qualifications, he or she shall upon conviction be adjudged guilty of a misdemeanor and punished as provided for in this act; and any person who assists any applicant to misrepresent or fraudulently obtain any certificate or writing showing credits to which said applicant is not entitled shall likewise upon conviction thereof be adjudged guilty of a misdemeanor and punished according to the terms of this act. All examinations for registration may be written or clinical, or both, and of such character as to thoroughly test the qualifications of the applicant to practice dentistry or dental surgery. No person shall be eligible to registration as one competent to practice dentistry in this state unless the applicant in his or her examination shall make a grade or percentage required by the Board which shall not be less than an average of seventy-five per cent in the subjects for examination required by this act; it shall be the duty of said Dental Board to make careful investigations as to the moral standing of the applicant; the Board may in its discretion refuse to grant a certificate of registration to any person found guilty of making any false statement with intent to

mislead said Board, or any member thereof, or who shall cheat, or attempt to cheat, or deceive said Dental Board or any member thereof, either in application for a certificate of registration, or in taking said examinations, or in procuring a license. If the applicant shall pass a satisfactory examination, and in the opinion of the Board, shall possess the qualifications required by this act to entitle him or her to registration as herein provided, then the Board shall issue to such applicant a certificate of registration, which certificate shall be signed by all members of said Board and attested by the seal of said Board; said certificate shall show that the applicant has passed all requirements of the Board and has been registered as a person who is competent to practice dentistry in this state; such certificate of registration, however, shall not authorize the person to whom it is granted to practice dentistry, it shall only be evidence of his qualifications to practice; before one may practice he must procure from the Board, as provided in this act, a license, authorizing him or her to practice dentistry.

Section 5488. *Failures—re-examined, how.*—Should any applicant fail to make the required grade, as herein provided, and by reason of such failure should fail to be entitled to registration, as provided in this act, then such person or persons may, upon request to the said Dental Board, be entitled to another examination, which shall be held at any regular meeting of the Board, upon making application therefor, and upon paying to the Board a further sum of (\$10.00) ten dollars for such additional examinations.

Section 5495d. *Applications—Oath—Diplomas—Fees.*—All persons entitled to examination or registration as dentists as provided in this chapter, shall file application for such examination on forms prepared and furnished by said Board, which application shall be supported by an affidavit of the applicant stating fully all facts which entitle the applicant under this article to such examination; each applicant shall accompany his application with the original diploma or certificate granted to the applicant, and if the applicant be a practicing dentist from another state, then with his license and certificate of registration from such other state. All applicants for examination shall, at the time of making such application, pay to the secretary of the said Dental Board a fee of twenty-five dollars (\$25.00); and each applicant shall present himself or herself personally before said Dental Board for examination at the first or second regular meeting after his or her application shall have been received and filed; if default is made on the part of such applicant to so present himself or herself for examination, the fee so paid shall be forfeited; the fee of any application for re-examination shall be ten dollars (\$10.00), which shall accompany the application for such re-examination. The blank for re-examination shall be furnished by the Board and used by the applicant. All exam-

inations may be written or oral, or both, at the option of said Board, and shall include the following subjects: Anatomy, chemistry, physiology, histology, *materia medica*, therapeutics, dental metallurgy, pathology, bacteriology, operative dentistry, prosthetic dentistry, crown and bridge work, orthodontia, and oral surgery and hygiene, and such other kindred subjects or matters as may from time to time be deemed necessary and proper by the Board. All persons who shall successfully pass such examinations, and shall show to the Board that they are persons of good moral character, shall be registered by said Dental Board as persons entitled to receive a license to practice dentistry and shall receive a certificate showing that they are entitled to receive a license to practice dentistry in this state, which certificate shall be signed by all members of the Board and the seal of said Board affixed thereto. The fees provided for in this section shall not be refunded to the applicant. If any applicant shall be unable to take any examination at the time and place applied for the Board may, for good cause shown, permit such applicant to take such examination at a regular meeting of the Board without paying any additional fee therefor. After the applicant has been granted a certificate of registration showing the applicant to be entitled to a license, then the applicant, upon application to the Board may be licensed and authorized to practice dentistry as provided by this act.

Section 5495e. *Registration Fees—Board—how paid.*—In order to provide means for carrying out and enforcing the provisions of this chapter, said Dental Board shall charge each person applying to it for examination for registration as a dentist, as provided in this chapter, a fee of twenty-five dollars (\$25.00), and for each re-examination a fee of ten dollars (\$10.00), if taken as provided in this act; and for each license issued by the Dental Board authorizing the licensee to practice dentistry in this state a fee of one dollar (\$1.00), which license shall be issued agreeable to the provisions of this act.

MONTANA—LAW APPROVED MARCH, 1909, AS AMENDED

Section 1577. Any person who desires to begin the practice of Dentistry in the State of Montana after the passage of this Act shall appear before said Board of Examiners at any of its regular or special meetings for examination. To be eligible for such examination the applicant shall give satisfactory evidence of having practiced dentistry for five years, or shall present a Diploma from a reputable Dental College. The examination shall be conducted in English and shall be thorough, practical, and sufficient to test the ability of the applicant to practice Dentistry. It shall include: Operative and prosthetic dentistry, osteology, dental and general anatomy, histology,

bacteriology, physiology, pathology, chemistry, metallurgy, materia medica, therapeutics, orthodontia and anesthetics. Demonstrations in operative and prosthetic dentistry, prognosis and diagnosis will be required. All applicants must furnish their own material for demonstrations. If the examinations prove satisfactory to said Board of Dental Examiners, they shall issue a certificate of registration to the person examined. All certificates issued by the Board, shall be signed by its President, Secretary and a majority of the Board present, and shall have its official seal attached thereto.

Section 1582. In order to provide means for carrying out and maintaining the provisions of this Act, the Board of Dental Examiners shall charge each person applying to or appearing before said Board for examination, a fee of twenty-five (\$25.00) dollars. In case the applicant fails to secure a certificate from said Board, he may appear again before said Board for another examination, and when the applicant has passed and certificate issued, an additional fee of twenty-five dollars (\$25.00) will be charged. Every registered Dentist shall in each and every year pay to the Board of Dental Examiners a fee of four dollars (\$4.00) as his annual dues, such payment to be paid on or before the first day of May of each year. In case of default of such payment by any person, his or her certificate may be revoked by the Board of Dental Examiners upon thirty days' notice from the Secretary, to the person holding such certificate, unless within said thirty days said annual dues shall be paid, together with such penalties as the Board may impose, and the Board is expressly authorized to impose a penalty of one dollar (\$1.00) as a consideration for each year, for allowing the certificate to remain unrevoked. In case any registered dentist absents himself from the state for a period of one or more years he may be reinstated by the payment of a fee of (\$1.00) one dollar for each year absent.



DENTAL ECONOMICS

A Wrong Interpretation of the Term “Selling Service”

By George Wood Clapp, D.D.S., New York

At the close of an address recently upon dental economics, a dentist of national reputation who has rendered much broad-minded service to the profession came forward and said: “Some of us have been unfavorably disposed toward economic lectures and writings because of the actions of Dr. Z.”

The speaker went on to say that no one had any personal or professional criticism of Dr. Z., but that he had recently become most enthusiastic upon the subject of dental economics and was effecting changes in his practice in a way which seemed to his fellow-practitioners to degrade and commercialize the profession. He had become a crank upon the subject of selling service. He talked continually to patients about selling this and selling that, treatments, inlays, bridges, etc., to such an extent that his secretary, apparently a very intelligent lady, left his employ for a position in an office conducted upon what she considered more professional principles. When Dr. Z. was remonstrated with, he replied that Dr. Clapp continually used the term “selling service” and therefore it must be proper.

Was the criticism of Dr. Z.’s methods justified? If so, what justified it? Accepting the statement of facts as presented, I think it is justified.

The characteristic in Dr. Z.’s procedure which seems to me to justify criticism is that he has grasped only one-half of the idea of selling service and that the other half has gotten by him. He has grasped the fact that any service rendered by him as a means of exchange for money is a sale; the idea which appears to have gotten by him is that the term “selling service” and all similar terms are strictly for “home consumption,” for use among dentists in studying procedure, and for discussion; but that all such terms are absolutely contraindicated between the dentist and the patient.

It is well enough for us to talk about selling service or some other term in its place, provided it covers both the thing we get and the thing

we give, but that term should rarely, if ever, reach the patient's ears or knowledge. Assuredly it should not be used in presenting service or when arranging the financial details connected with service.

Dr. Z.... would do well to observe the procedure of any skilful salesman. Such a salesman will first learn his customer's need or desire. He will use his special knowledge in the selection of something to fill that need or desire and will produce the best that he has for that purpose. If he is a first-class salesman, he will present fairly and truthfully the advantages and suitability of what he produces. He will lend to his words the force of an intelligent, interested and pleasing personality. He will never talk about "selling you this or that." The one term which he will omit from all conversation will be "sale." He will talk always from your point of view, never, apparently, from his. He will say, "I am sure this will meet your requirements or give you pleasure or prove satisfactory"; or, "I think you will be much better satisfied with this than with that"; or, "This is excellent value for the price."

The skilful salesman seems to put himself into the customer's place and to cause the customer to look at the article through the salesman's eyes and to share the salesman's opinion of its desirability, so that what the customer gets looms big upon the vision and what he gives appears to be small. You may talk to such a salesman once or repeatedly, in short sessions or long, upon small subjects or big, without hearing the word "sale." The mark of the really fine salesman is that he makes the customer think of him as a friend and think pleasurable of what he bought rather than of the price he paid.

Selling service is something that should come more readily and easily to the dentist than to anyone else. No salesman in any commercial industry has such necessary and advantageous service to offer. The dentist is a salesman of health or comfort or appearance to be retained or regained or improved through his service. That service is something essential to life; it is "nearer than hands and feet." Without the health to which dentistry is such an important contributor, nothing else is worth while; with it, one can be happy with few material possessions.

There are few salesmen in commercial lines who have the dentist's opportunity for technical education upon which, as a basis, claims in favor of the proper kind of service can be advanced.

As the dentist's intellectual training has been greater than that of most salesmen, his opportunities for developing a pleasing personality have also been greater. He should be the one to whom other salesmen should look for a pattern.

Dr. Z.... needs merely to enlarge his conception of service selling, to omit all reference to "selling" when talking to patients, and to

present his facts in a truthful, pleasing manner in keeping with the dignity of his profession, and that dignity and worth which he expects to achieve as its representative.

Dental Credit*

By G. F. Jones, Omaha, Neb.

All credit from its very nature must be based on Faith. Faith in the belief that the debtor will satisfy the creditor, or pay his account on the due date.

A credit man's functions are simple, merely seeing to it that the debtor is worthy of credit, and after granting, to remind him of his obligations and see that he cares for them. If every debtor would voluntarily pay his bills, there would, of course, be no need for the credit man.

Every dentist, in addition to being a professional man, is a credit man also. Because his is an individual or personal business, upon his judgment as to the granting of credit depends his ultimate success or failure.

Therefore, while credits may appear dull and uninteresting to many of you, there is no gainsaying the fact that you should work in conjunction with your local credit organizations such as Commercial Clubs, Collection and Rating Bureaus, etc., to properly insure yourself against loss. Especially does this apply to the young dentist locating in a territory with which he is not familiar, but young or old, with the information that is on file concerning the financial standing of everyone engaged in business, there is little excuse for the dentist not posting himself on the financial status of each patient before the case is completed, and the possibilities of getting his money upon completion of the work.

To the younger men, I would advise that immediately upon opening an office, contrive to know one or more bankers, or at least someone connected with one or more banks (likewise lawyers in smaller towns are good sources of information on credits), who could post you as to the financial worth or standing of patients. But also bear in mind that the man who can afford or who is financially able to satisfy his creditors isn't always a desirable patient from the paying standpoint. No matter if a patient is worth a million dollars, if he is notoriously slow in paying his bills, then caution should be used in extending him credit without a definite settlement date.

Many dentists act as if they were afraid they had committed an unpardonable sin when the subject of payment has to be mentioned. For that reason we hear of patients leaving their dentists under various

*The gist of several talks made by Mr. Jones before dental gatherings by special invitations.

pretexts, but traced back, it generally arises from a lack of understanding as to the payment of bills, for which primarily the dentist is to blame.

No piece of dental work should ever be started unless mention is made as to payment of the bill, either as the work progresses or to be settled for at the finish. It would be like a contractor building a house without knowing when or where he will collect as the work progresses.

Many dentists have from two to six months' business on their books—financing the other fellow and straining their own credit to do so. No mercantile business could survive on the same basis as the dentist conducts his practice.

The plea is made that dentistry is a profession—practiced by men of high ideals—to relieve suffering humanity, that it should not be commercialized by even mentioning money. Away with that buncombe! Dentistry is a bread and butter proposition. You can't get away from that. If you disbelieve it, try to get your landlord or butcher to agree with you—but better yet, ask your wife. She knows! Have your high ideals, but keep your feet on the ground, although you like to go sky-larking.

I have been associated with dentists for twenty years. I have lived with them, vacationed with them, fished with them and even golfed with them. Some of my best friends are dentists, so that I feel that without being egotistical, I know them "in and out." I know when they are bluffing about a \$10,000 a year practice. Show me a dentist's bank book and I'll tell you within a few dollars of what he actually has for his own at the end of the year, and I have the first dentist to see who has such a great surplus derived from his practice that he is compelled to pay a large excess profit tax.

Every dentist should be well dressed, own his home, go to the opera and do the countless other things that the business men of his community do. But how is he going to have and do those things if he ignores all of the fundamentals of business—the most vital of which is the granting of credit?

There isn't a dentist who reads this article who wouldn't like to say truthfully that his patients' accounts are settled every thirty days—even ninety days would be a Godsend to many. The answer or solution is in his own hands. It should not be left to the discretion of the patient as to when his account is to be paid. The dentist is the man extending the credit and he should set the settlement date. I know that many dentists will say they have patients who can't pay their accounts in full at the end of thirty days. Very well; to such patients explain that your terms are 30 days, but if they will make regular payments monthly you will do the work agreed upon, but have a definite date upon which these payments are to be met. Use the same method that

your bank does if you have a note to meet on a certain date, or at least tell them they owe it, and don't violate all the rules of granting credit by crying "poor month" when you are asking for what is due you. That is a positive sign of weakness and the debtor will in all likelihood keep you waiting until you can find a better excuse.

Sounds "hard boiled" to you with all the sentiment removed, doesn't it? But it is only common sense. Then after you have collected what is due you, it is entirely your own affair if you choose to return it to your patient out of the goodness of your heart, but I rather think the "Missus" will have something to say as to how it will be spent.

The Ethics of Modern Practice

By Ralph Fouser, D.D.S., Salem, South Dakota

So much has been written about the brotherly love or the fraternal spirit which should prevail among professional men that it seems unnecessary to make mention of such a subject, and yet it might be well at this time to recall some of these fine aspirations of men as it would seem that this brotherly love would show itself to be a benefit to all concerned.

And especially at this time should the dentist note these facts, as we are confronted with problems of our present-day practices which have been brought about by methods that were in vogue a few years ago, and which were the accepted methods of practice at that time, viz., pulp removal, root resections, etc.; and even in this most enlightened day we have many practitioners of prominence and ability who approve this practice, only under different conditions than is usually employed by the average dentist.

Everyone has had almost daily occasion to note in his practice the havoc that has been wrought by the past methods of dentistry, and it is very easy for some of the modern crusaders to administer to the patient that toxic reproof of the previous dentist's work that all thoughts of professional love have long since taken to their far away abode, but the very man that may be directly or indirectly condemning the previous man may himself practice or have practiced the very same methods, but he is not telling the patient in the chair these facts but has seen fit to use the other man's work as a basis for his new field of endeavors, viz., Reconstructive Dentistry.

If each dentist will make an invoice of fraternal feelings for his fellow practitioners, and apply to his daily practice, he will not only benefit himself but the many others, and he will have that sense of satisfaction of "Doing unto others as you would that they should do unto you."

And who knows but that notwithstanding our modern enlightenment of today, our present methods will be disapproved in the next cycle of practice, as already it has been stated that in a large percentage of cases of gastric ulcers and cancers of the digestive tract it has been a very noticeable fact that the masticatory apparatus of the patient had either been destroyed or badly impaired, and so frequent have these conditions been met that it has been the occasion of much concern to investigators.

But one method of practice we are sure will remain as approved practice through all the years, and that is, the Thorough Removal of Foci of Infection.

So why not each one of us resolve that we will give each and every one of our patients the very best of our knowledge of the accepted methods of practice, and also resolve that we will give our fellow practitioners the fairest measure of brotherly love, for who knows but that the bold accuser of today may become the accused of tomorrow!

What I Have Learned About People and Money

By J. T. Tuomy, D.D.S., Bemidji, Minnesota

I have practiced my profession for twenty years in the same town. I have people from all walks of life and have had many and varied experiences concerning the payment of bills. And I feel that I still have a lot more to learn before I can size up an individual and place him accurately as to his ideas of money. But I have learned certain earmarks by which I can obtain a fair idea of whether a person is a good or bad pay. Of course, that may be divided under several different heads. There are people who are always prompt, those who are slow but sure, those who will only pay part of a bill, and the dead beats. And still I might go on and subdivide, but at that it would only be giving a slight amount of information regarding the different and sometimes queer ideas that people have regarding money.

Some people owe me, and because of the indebtedness have gone elsewhere to have work done. That is not so bad if they did not knock my work. They do so to justify themselves, little dreaming of all the harm they do. Women do this more than men. When forced to pay their bills they will often come back to have work done and will act as if nothing had happened, with the exception that they pay me at once.

There are people who can pay and will not do so unless forced. They have the money but hate to part with it for one or more of various reasons—most often to buy something for which they must pay cash. I have noticed in instances of this kind that it is not one member alone but the whole family that will have the trait. I have in mind a young

lady of such a family. She came to me to have some bridge work done so she could attend a big social affair. She did not want to go minus teeth. I had had experience with her family, so I demanded my pay in advance, not just a deposit but the whole amount. The young lady refused to pay it. I refused to do the work. She left the office, as I supposed, never to return. In a little while she came back, handed me the money and told me to go to work. She confessed that she had the money with her all the time but was keeping it to buy clothes.

Within recent years there has sprung up a class from which I have to be on my guard all the time. They are young people, mostly girls. They are drawing good salaries but use their money in dressing and living beyond their station in life. Quite recently a young lady came to me whom I had every reason to believe was sure pay. It was a charge account. She left town immediately without saying a word to me. After considerable trouble I found her address, and she pays no attention to the statements I have sent her. Another young lady came into my office and had work done. She told me she would pay me as soon as I was through. But she left the office saying she would be back to pay her bill the next day. I have never seen or heard from her since. She never had any intention of paying. She had the work done because the need of it was a defect to her personal appearance.

Just the other day a young lady from a prominent family got married and left town owing me for her work. In this case it was not alone the loss of the bill but the physical strain I was put to. She was working, and the only time she had was the noon hour, and she never showed the least compunction about asking me to do it at that time. Now I am put to the annoyance of collecting from her new husband. I am not up on wedding finery, but I am told hers was very fine, and that she was one of the best dressed brides of the season.

I do not like people to pay me in installments, or rather promise to do so. There are several different reasons why I do not. Often people stop paying the installments. They get to owing other bills and get in so deep that they feel overwhelmed. Instead of trying to get out of debt by paying small installments they stop paying entirely. The results are bad for such people. They buy around until their credit is exhausted and then use up their earnings in daily living without qualms over indebtedness, and often join the class called dead-beats. Another reason why I do not favor the installment plan is this: If I agree to let one patient pay in this manner, he or she will often tell friends, and then they want to pay the same way. And if I do not allow them to do so they are offended and accuse me of showing partiality.

Then there are the people who are paying by installments, get to thinking they were over-charged. When they think they have paid

enough they stop. Of course, there are people who stop because of sickness or loss of jobs, but they are usually the ones who will resume their payments as soon as they can.

There are people who will pay small bills but not big ones. They do not seem to realize that a small payment on a big bill helps. Seem to think if they cannot pay it all at once they need not pay any of it.

I never discount bills thinking to get paid in that way. One reason for this is that it would be thought that I had overcharged in the first place. And if I did it with one bill I would be expected to do it with others.

I never lower my prices because the patient may happen to be a friend. They too may tell it to other patients, who in all probability would not understand. Then too the friend is liable to think I have lowered that standard of my work as well as the price. Take it one way or another it would not be appreciated by the friend, and I would only be making trouble for myself.

There was a time when I would agree to take supplies from people who seemed to be hard up for ready cash. For the work I did they would promise to bring me so much wood, dairy products, or whatever they might have on hand. Now everybody must pay me cash. Experience has taught me that I am most always the loser in such a deal. The man who promised the wood will bring in a load or two and then quit. Call him up and he has excuses galore why it is impossible for him to get to town. At the same time I know he has been bringing in wood to someone whom he did not owe and from whom he received cash.

One year a woman wanted to pay me with crates of fruit. The fruit was so poor in grade that we did not care to use it. A banker's family who was getting fruit from this woman at the same time and paying cash for it claimed that their goods was about perfect. It was evident that this woman found it hard to pay for what we might call a dead horse.

I have had people not want to pay me their bill for this reason: They fear that work may not prove satisfactory, and to have it made so would have to pay over again. Not long ago a woman whom I knew could easily pay me refused to do so. After considerable questioning I found that she feared this very thing. I could not convince her that it was my business to make her work satisfactory and not to charge her anything extra for the making of it so. But I might as well have talked to the wind. She knew of someone who had to have work done over, and was charged extra for it. Dr. So-and-so did it, and she seemed to feel or act as if she did that I was waiting to do the same. Seeing I was only wasting time I had her husband come to the office. He listened to reason, paid me, and that is the last I have heard of them.

I know a woman who keeps a sort of diary. She calls it Jolts. She is a woman who is always ready to help people in time of need or trouble, and this diary tells of some of the things she has gotten back in return. Now if I had kept such a diary during the last twenty years it would be a mighty big one. And my jolts have come from the most unexpected sources usually. Last year, for instance, I had a man come to me for a big job. He holds an excellent position in business. I did the work little dreaming I was not to be paid for it right away. The work was so satisfactory that the man gained in health, but I have never been paid a cent. He tells me he is going to pay, with interest as well. Meantime he disposed of his old car and rides around in a beautiful new one. And the gasoline he uses in one month would help quite a little toward paying the bill.

Then there were two young men, brothers, whom I did work for several years ago. They had a good record when they came to me to have work done. They were nice boys and I enjoyed working for them. When I was through they both owed me big bills. And as soon as the work was done they cleared out. I traced them up to Canada and from there to Chicago. But I could not get a hold on them. When a collection agency got in touch with them they would disappear.

Compare those two with another boy whom I had about the same time. He was a high-school boy and must make his own way entirely. In a football game he had his front teeth knocked out. He must earn the money himself to pay the bill. He did so working hours out of school. As he must clothe himself as well as buy any needed school supplies the paying of his bill must be of necessity very slow work. He paid me a dollar a week and kept at it until he paid the whole bill. My inclination was to let him off easy, but I did not do so on account of the lesson it contained in regard to the attitude he would take toward bills in the future. And to have discounted the bill he would never have experienced the pleasure he did in his received bill. There is a big meaning in such a bill. When there has been a big struggle to pay, a received bill is a source of pride and satisfaction.

Now why was *this* bill never paid. A woman came to me several years ago to have a big piece of work done. She was from a well-to-do family, and her husband was a minister turned author. I would have sworn that that was the one bill to be paid above all others. They left town. I was never paid. Afterwards I learned that he was harassed by bills run up by his wife, and that he had changed his vocation in an effort to meet his obligations.

Once a superintendent of schools came to me from a small town. He had work done, and without saying anything about the bill he walked out and that was the last I heard from him directly for over two years. I sent him letter after letter but he made no response. I

learned that he was highly esteemed in his home town and that he was considered a rising young man. I curbed impatience and waited. One day he walked in and said he had come to settle up. He made no explanation of the delay until I asked him. Then he told me he had to support his brothers and sisters, and that there had been a lot of sickness. I could see that the man was full of pride and that the subject of the bill and the whys and wherefores of his not paying it caused him pain and chagrin. How much better if he had seen fit to enlighten me in the beginning. It would have at least saved me time and postage. It makes a difference in my attitude toward a person if I know there is a financial struggle and that in the end I will be paid. In such cases I give them plenty of leeway by leaving them alone. And when the struggle is over I have had them come and pay me, then shake hands and say they would not forget it in a hurry, meaning that they appreciate my seemingly forgetting them.

Here are some of the earmarks of those who come to me with no intentions of ever paying. They want the work done in a hurry, they do not care what the price is, and they keep telling me what a good fellow I am.

Of course, I have lost bills but every year they grow less through my acquired knowledge of people and the ideas they may hold concerning money. I never hesitate to ask people for a deposit, or the full amount when I have the least doubt of getting my pay. And every year less goes on the books and fewer bills remain unpaid, and that with a practice that has grown larger steadily.

I never allow customers to dictate prices to me, although many try to do so. They must pay what I ask or go elsewhere. They have no idea of the cost of material or the value of my time. That is my business not their business.

I do not sue people. I live in a city of the fourth class, where everybody knows the other fellow. Consequently I feel that in many instances it would be poor policy and I would lose more financially than I would gain. It has a bad effect upon other people.

Overcoming Complaints from the Public on Dental Fees

By Harry J. Bosworth, Chicago, Ill.

Most anywhere one goes among the laity, when the question of dental fees comes up for discussion, invariably the belief in the minds of the public is that they are excessively high, and this impression prevails even where the fees are below a profit-bearing basis for the dentist.

Having this in mind (knowing dentists' condition as well as anyone could) I know the fees are, in most cases, not even fair to the dentist, and in going into the subject with a view to finding a remedy for this unfortunate and serious situation (having proven up my conclusions in all kinds of practices in all sizes of towns) I know this can be remedied by setting up a fee for Examination, or better called "Diagnosis," basing same on a full set of X-Ray pictures; a study model articulated; allowing plenty of time for a careful clinical examination, and going into the history of the case, after which you are in position to give as near a true diagnosis as is possible.

Then quote a fee for the constructive work, plus treatments and broken appointments, same to be paid for as the work progresses; i.e. mail a statement for complete or incomplete operations on the first of every month; this plan has all advantages for both patient and dentist with no possible disadvantages to the patient, who is serious about his work and intends to pay for same.

Make the rule of quoting the fee for constructive work in advance to *all* patients regardless of who they are, because a man as temperamental as a dentist, who constructs all he has to offer himself, cannot afford to have "kick backs" or misunderstanding about fees. In many cases not only is the fee protested but the work condemned where a fee has not been understood in advance.

Use the same care in selecting patients as patients do in selecting their dentist.

Be paid for diagnoses.

Always state a fee for constructive work.

State fee for surgery where fee is beyond the usual extraction fee.

Have all services paid for on the first of every month whether operations are complete or not.

Then your grief of "excessive" fees and unpaid accounts is over.
TRY IT!



PRACTICAL HINTS

This department is in charge of Dr. V. C. Smedley, 604 California Bldg., Denver, Colo. To avoid unnecessary delay, Hints, Questions and Answers should be sent direct to him.

Editor Practical Hints:

In a recent issue of the Digest you have an article dealing with the loss of taste by patients who wear full upper dentures. I have noticed the same thing with rubber plates, but not with metal base plates.

All taste buds are located on the tongue, so plates cannot alter the taste, but they can and do alter the active sensation of taste. The palate is the floor of the nose as well as the roof of the mouth. The rubber plate acts as an insulator and does not transmit heat or cold, so does not change the temperature in the nose readily. If the patient drinks coffee with the plate in the mouth, the nasal cavity is not warmed as it would be with the plate out, nor is it cooled with ice cream as it should be, etc.

After a patient wears a plate for some time he becomes used to the new taste, as when one changes the brand of cigar.

This may be proved by replacing the rubber plate with one having a metal base. But the full importance that smell has to do with taste may be demonstrated very easily. Select a subject, blindfold him, and stop the nose with cotton, then feed him a piece of peeled apple, then a piece of onion. If you have not taken him into the experiment, enough to know what you feed him, he will be unable to tell you what he has eaten.

C. R. LANPHERE.

Editor Practical Hints:

Saw request of B. H. S. regarding method of repacking old plate, and here is what I do. If plate is broken, re-assemble with sticky wax on palatine surface and invest in lower half of flask with teeth in plaster, and bring plaster to margins of plate. Let plaster set, remove sticky wax, apply separating medium to plaster, pour rest of flask being careful to shake down thoroughly; let set and then heat the flask with dry heat until it can be separated easily. If old rubber is too hard to be removed, soften it with the blow-pipe, burning it if neces-

sary and peel it out carefully. This will leave the teeth in the plaster and avoid the chance of checking them as in heating over an open flame. Clean out mould in flask with a little gasoline on cotton, pack in new rubber, vulcanize and finish. Sounds like a lot of work but it isn't, and does away with the resetting of the teeth.

C. N. BLACK, D.D.S.

Editor Practical Hints:

I am an interested reader of your "Practical Hints" in DENTAL DIGEST, and have been reading lately of ways of sterilizing modeling compound. I have a suggestion. Why sterilize it at all? All that is required is to be just reasonably clean. Buy your modeling compound by the half-dozen or even dozen boxes, and take a new clean cake for every patient, warm it up in clean water, use a clean tray and manipulate with clean hands and there is absolutely no chance of infecting anyone. When through with it, throw in the waste receptacle and repeat the procedure next time any is required.

Also noticed Joseph Homer's suggestion for use of old extracted teeth. That sounds very practical, and possibly economical, but better never let your patient in on the secret, or your competitor.

C. R. STORER, D.D.S.

NOTE.—I think dentists as a rule are about the most heedless, wasteful class of people you can find. We are continually buying and throwing away everything we use; burs, modeling compound, wax, engines, stools, cabinets, and everything. We should have our burs resharpened; wax can surely be sterilized by boiling as thoroughly as instruments can and should be resheeted and used over again; and if modeling compound can be thoroughly sterilized without destroying its working qualities, there is no sane reason why we should throw it into the waste receptacle and take a new piece whenever we have occasion to use it. I will acknowledge that I have been following the more extravagant and convenient course, but I certainly have no quarrel with the man who is more conservative if he knows he is right.

I also think you are wrong in your criticism of Dr. Homer's suggestion for the use of extracted teeth in bridge work. I am sure that in this instance Dr. Homer's position is not prompted by ideas of economy but of better esthetics and of better service to his patients. Am very sure that he does not put teeth extracted from another person's mouth in for any patient without full knowledge and appreciative consent. I have frequently used a patient's own extracted teeth in this way with very gratifying results, and see no objection in some instances to using thoroughly sterilized teeth from other mouths.—V. C. S.

Editor Practical Hints:

Which of the two drugs, formaldehyde or ammoniated silver nitrate, causes the severe pain when forced through apices?

Dr. Herman Prince, in a lecture to the Odontological Society of Pittsburgh, October, 1920, said that the ammoniated silver nitrate causes the pain. If this is true would plain solution of silver nitrate cause such pain, or is it the ammoniated variety only that causes the trouble?

Most dentists think the pain is due to the formaldehyde alone, and if this is true would it be wise to attempt to substitute creosote for formaldehyde and thus avoid the trouble?

Briefly, is there any way to avoid the danger of periapical pain which makes this method uncertain?

J. E. BALDRIDGE.

ANSWER.—Substitute eugenol instead of creosote for formaldehyde. Eugenol precipitates the silver solution in much the same manner that formaldehyde does and eugenol is one of the most soothing sedatives that we have. I cannot tell you whether ammoniated silver nitrate has any irritating effect when used by itself but I do know that eugenol by its soothing effect would have a tendency to allay such irritation if present.—V. C. S.

Editor Practical Hints:

I would like you to give me your opinion on the following case:

Young man, 35 years old, had crowns placed on left lateral and central about 10 years ago. Never gave him any trouble until about two years ago, when he noticed a swelling on the inside of mouth. This he let run until he came to me, and I advised extraction of same. Lateral incisor was taken out, and instructions given to return to see how things progressed. The third day he returned to state that there had been a lot of pus escaping. I then scraped out the socket, took out some of the alveolar process that was dead and washed out same with aromatic chlorazene, then packed with iodoform and eucalyptus and changed every other day. This man being a farmer I could not get him to come every day. On changing I found plenty of pus, I explored but could find no opening into nasal chamber. This went on until I extracted the central incisor. I found a small gum tumor, but this socket has all healed up at this time. At this date took a bur and removed all the alveolar process that was left, and used aromatic sulphuric acid once a week, leaving same in for 10 or 15 minutes, then swabbing out with oil of cassia and packing with iodoform and eucalyptus oil. What I would like to know is can I hurry this along? It is coming along alright, but not fast enough for the patient.

If you will kindly give me your opinion of the case I will appreciate it very much.

DR. A. G. GIESE.

ANSWER.—I am convinced that your troubles with this case were practically at an end at the time your letter was written. I think the time to stop treating such a case is when the dry, dead appearance in the socket has been replaced by moist, readily-bleeding tissue. If this man is too busy with his work to think of his sore mouth or return for treatments Nature will in all probability effect the best possible cure in the shortest reasonable time. I think you have overtreated this case. Careful removal of the granulomata without bruising or lacerating the alveolus is the proper technique of extraction in these cases, excepting where necrose bone is present; in which case it should be dissected back until normal bone is exposed. Then avoid all strong medicaments; salt or chlorazene solutions are sufficiently antiseptic, and are undoubtedly conducive to normal healing activity.—V. C. S.



DIETETICS and HEALTH

What Are Vitamines?

Only in the rarest instances has human life endured beyond the century mark, and the hope that we shall ever be able appreciably to lengthen the maximum span of existence seems somewhat chimerical. But a series of recent experiments holds the rather definite promise that such a thing is not impossible, and that we may be enabled to wage such a successful fight against old age that a man will still be "young" and virile at a hundred. The agency which promises this miracle is the mysterious food element which scientists have named "vitamines."

Another remarkable group of experiments is being conducted at the Rockefeller Institute for Medical Research and elsewhere, which forms the basis for the conclusion that the tissues of the human body are potentially immortal; or, putting it another way, that barring accidents and disease we ought to live forever.

The reason we do not actually live forever is that the organs which compose the complex human mechanism are interdependent, and failure in one, even a minor organ, induces failure in others. As time goes on there is produced the phenomenon which we have come to associate with old age, and finally death.

It seems that medical science has pretty well accepted the conclusion that the physical wellbeing of many of these organs is controlled by certain glands, which have been merely disregarded heretofore because their function was not understood. These new experiments indicate that the action of the glands, and consequently many bodily functions, depend in part or entirely upon an element of food, which, although it has not yet been isolated, has been arbitrarily named vitamines.

The case against vitamines might well be first considered, for it is based upon the fact that they are mysterious. No one has ever seen a vitamine; the existence of vitamines has only been surmised from the very definite effects upon the animal organism when lavishly fed with vitamines and when deprived of them.

It is a historical fact that men, in their search for new agents which would protect or extend life, have often attributed marvelous curative powers to the mysterious. This was not only true of ancient and

medieval times when witchcraft and sorcery were thought to be at once the cause and cure of disease, but also in modern times. It was not so long ago that the subject of medical electricity was much discussed and marvelous things were predicted. Electricity has proved very useful and its medical field is being constantly extended, but the hopes of these early experimenters have not been realized. So with radium and other curative agents. We ought to be warned in advance, then not to be too hopeful of what the exploration of this new field will reveal.

Vitamines are the elements in food which are apparently vital to certain functions of the body, necessary to human—or animal—existence. Hence the name.

The existence of vitamines was first definitely established during the Russo-Japanese War. Large numbers of Japanese troops, subsisting largely on a diet of polished rice, developed a disease called beri-beri, similar to scurvy. Considerable experimentation showed that an effective remedy was the feeding of a small quantity of the rice polishings. From this it was inferred that there was some vital element in the surface of the rice grain. Further experiment showed this vital food element to be present in many other foods, in a greater or less degree, and, in the case of fruits, vegetables and grains, nearly always on the surface or skin. Thus the bran of wheat, the peel of an orange, and the skin of a potato, are rich in vitamines.

It has not been possible to isolate positively these vitamines, and their chemical composition is unknown. It has been possible, however, to prepare concentrates very rich in vitamines and to prepare other foods almost wholly lacking in them. By feeding these to various animals and noting the effects, we have succeeded to some extent in furthering our knowledge.

Thus a mouse, given a normal diet but deprived of vitamines, gradually loses its sleek appearance and weight. Certain of the organs, notably the glands, decrease in size and the very nature of the animal changes. A condition of perfect health and vigor can be restored in a few days, however, upon the identical diet, but with the addition of a very small quantity of vitamines.

These things seem quite unreal and impossible to the average person, because they are so far beyond the range of ordinary experience. We cannot vouch for these statements, true; but there is undoubtedly some basis of fact. At least, there is a growing conviction among scientists that the glands play a more important part in our earthly existence than we have supposed. Recently medical men of high reputation have advanced the theory that the appendix, long considered merely troublesome and useless, is a gland with important functions.

It has been possible, in tests with animals, to accelerate or retard the growth and vigor of any of the glands at will, with very marked results to the whole body. From these experiments the vitamines have

been divided into three classes called Vitamines A, B, and C. Vitamine A is a fat soluble, such as is obtained from milk. Vitamine B is a water soluble, such as is obtained from green vegetables, and appears to be closely associated with growth, especially in young animals. Vitamine C is also a water soluble such as comes from oranges and lemons, and seems to be concerned especially with keeping adult tissues in healthy condition.

Undoubtedly many persons are suffering from a lack of sufficient vitamines. We use only the starchy part of our wheat, polish our rice, peel our vegetables and fruits and thus remove from our diet most of the vitamines. General health could without doubt be improved by replacing these lost elements. In this connection an eminent physician recently suggested that we eat at least a quarter of the skin of each orange because it is rich in vitamines.

It is very possible that the laxative action of many fruits, whole grains and bran is due in a measure to increased gland secretion brought about by the vitamine stimulation. As a result of our observations we wish to state tentatively that the actions of the organs of internal secretion are dependent upon the stimulating action of the vitamines. Whether this is in the nature of a nerve stimulant, nuclear nutrient, or chemical nucleus of a hormone is of course a matter of speculation.

But we are interested here, not so much in the improvement of the general health during normal lifetime as in whether this line of experimentation offers any hope that human life can be extended beyond the one-hundred-year mark which, so far, has been nearly always the absolute limit of life. Will it not be possible when the vitamines themselves, their effect on the glands, and the effect of the glands on the body are better known, to live for two hundred or five hundred years?

We may reasonably conclude from the scientific evidence already at hand that such a thing is plausible, at least. There seems to be no doubt that the potential immortality of the cells which compose the body has been established. There is a growing volume of evidence, perhaps not conclusive, but making the probability very great, that old age is induced principally by the failure of certain glands which exert a mysterious but a very real influence upon all of the bodily tissues. Finally, the life and vigor of these glands seems dependent upon the mysterious food element, vitamines.

It is too soon to draw positive conclusions, but certainly the path to a vast new field of research is now cleared away which field may hold tremendous results for the human race.—*Scientific American*.



Why Car Owners Mortgage Their Homes

It used to be that if one broke a part on an automobile it was worth while to have it fixed or replace it with a new one. Nowadays it is much cheaper to turn your car in as part payment on the part and buy another car.

*It was not like that in the olden days,
In the days beyond recall,
When you paid for just the work they did,
Just the real amount—that's all.*

Today the total is found by adding to the actual cost such necessary items as the day of the month, the year, the ward number, and the street address. If the cashier thinks you still have some money left, she adds your engine number and the license to the bill and multiplies the total by the horse power.



Communism is the dream of fools.

A good resolution will make any port.

(Old lady)—Which end of the car do I get off?
(Conductor)—Makes no difference, lady, both ends stop.

Lives of great men all remind us
That to make our influence reach,
We should know the parts of autos
Rather than the parts of speech.

(Miss Paul)—Did the young doctor break his engagement with you?

(Miss Fry)—Yes. He requested me to return his presents and sent me a bill for sixty visits.

He snuggled closer as he questioned her.
"Do you believe in Fate?"
She leaned back with a contented sigh as she replied: "I think what is going to happen will happen."

(Harry)—Did you hear about Gallam's tough luck?

(Tom)—No. What happened to him?

(Harry)—He has a stiff neck and can't throw his head back, and one of his friends has a quart.

"Aw," said Willie, "you're afraid to fight; that's all it is."

"No, I'm not," protested Jack, "but if I fight my ma'll find it out and lick me."

"How'll she find it out?"

"She'll see the doctor goin' to your house."

The husband was seeing his beloved wife off for a holiday. "My dear," he said, "hadn't you better take some fiction with you to while away the time?"

"No, George," she answered. "You know you'll be sending me letters right along."

"So your vacation wasn't a success?"
"It was a terrible place with nothing going on. I couldn't do a thing all the time but rest."

(Graylock)—Our ancestry dates back to the Norman Conquest. In fact, we originally descended from the Flint Crim in the Stone Age.
(Oldbone)—Shucks, that's nothing! Our pedigree fills five large parchment skins, and near the middle of it is a note which reads: "About this time the world was created."

Mark Twain once sat in the smoking room of a steamer and listened for an hour to some remarkable stories. Then he drawled: "Boys, these feats of yours that you've been telling about recall an adventure of my own in Hannibal. There was a fire in Hannibal one night, and Old Man Hankinson got caught in the fourth story of the burning house. It looked as if he was a goner. None of the ladders was long enough to reach him. The crowd stared at one another with awed eyes. Nobody could think of anything to do."
"Then all of a sudden boys, an idea occurred to me. 'Fetch a rope!' I yelled.

"Somebody fetched a rope, and with great presence of mind I flung the end of it to the old man. 'Tie her round your waist,' I yelled. Old Man Hankinson did so, and I pulled him down."

DO YOU BELIEVE IN SIGNS?

(In a tobacco store window)—You might as well smoke here as hereafter.

(In a hat store window)—Best lids in town—two bones.

(In a barber shop window)—Shoes shined on the inside.

(In the barber shop)—Satisfaction guaranteed or your whiskers refunded.

(In a printshop window)—Wanted, a boy to kick.

(In a laundry window)—Wanted, a man to wash.

(On door of employment agency)—A steady position for a sober man.

SOCIETY and OTHER NOTES

Continuous Gum Workers—Attention!

Will a few dentists who are doing their own continuous gum-work, and who would be interested in testing a new continuous gum-body, please send me their names and addresses? Thanks.

GEORGE WOOD CLAPP, D.D.S.
220 West 42d St., New York City.

Law Governing Physicians is Law for Dentists

The Court of Appeals of Maryland in reversing, without granting a new trial, a judgment recovered by the plaintiff, who sued the defendant, a dentist, for the alleged negligence and unskillfulness of his servant or employee in the extraction of the roots of a tooth for the plaintiff, says that it was referred to no cases in Maryland in which a dentist had been sued for malpractice, nor does it recall any. But there are a number of cases in which physicians and surgeons have been sued for malpractice, and there is no reason why the law laid down in those cases should not apply to dentists. The law as enunciated in such cases is that a physician or surgeon who holds himself out to the world to practice his profession by so doing impliedly contracts with those who employ him that he possesses a reasonable degree of care, skill and learning, and he is therefore bound to exercise, and is liable for the want of, reasonable care, skill and diligence, and he is responsible in damages arising as well from want of skill as from neglect in the application of skill. The cases are generally agreed on the proposition that the amount of care, skill and diligence required is not the highest or greatest, but only such as is ordinarily exercised by others in the profession generally. But while it is the duty of the professional man to exercise ordinary care and skill, a duty imposed on him by law, it will be presumed, in the absence of proof to the contrary, that the operation, or work, done by him was carefully and skilfully done. And because of such presumption, want of skill or negligence cannot be presumed, but must be affirmatively proved.—*Journal American Medical Association.*

Wisconsin Shows the Way

Dental Office Brought Into Remote County Schools

Converting the corner of a schoolroom into a dental office and bringing a dentist to the rural schools, was the unique method adopted in Lincoln county, Wisconsin, to improve dental conditions among country school children and to impress them with the importance of caring for their teeth.

Lincoln county has the distinction of being the first county in the state and probably in the country, to bring free dental service to children in remote rural districts. An appropriation for this work was made by the county board in January, but a dentist was not obtained until April, so the work on only during the last two months of the school year, Dr. F. A. Traver, a former Milwaukee dentist, had charge of the rural traveling clinic.

During the two months 41 schools were visited and 645 children were examined. The children ranged in age from 5 to 15 and approximately 90 per cent of them were found to be in need of dental care. Work was done on 516 children as follows: Fillings inserted, 460; extraction, 269; sets cleaned, 133.

Carrying a folding dental chair, such as was used in camp during the war, an instrument case, an alcohol stove, a foot engine, towels, napkins and soap, the dentist visited each school. A corner was usually curtained off, when the hall was not used, and within 15 minutes after his arrival examinations were started. There was no interruption in the school work and it was not unusual to have tooth extraction taking place on one side of the curtain, while a spelling match or reading lesson progressed on the other side.

Perhaps it was pride or a horror of being laughed at by schoolmates that worked the miracle. At any rate, Dr. Traver reports most unusual behavior of his patients—no yelling or sobbing and only a few tears. The only instance of the characteristic fear of the dental chair occurred at one of the schools, when five boys took to the woods and hid until they saw the dentist's car disappearing towards town.

A little 5-year-old girl was the bravest of the brave. After pulling three decayed teeth, the dentist thought he had tortured her enough for one day and dismissed her. At recess she returned and said to him: "Nother loose, won't you pull it?"

An important part of the clinic was the educational campaign. Lectures were given the children and their parents at each school. The dentist also talked to patients while working, impressing them with the need of caring for their teeth. Demonstration of the proper way of cleaning the teeth was part of the program. The importance of periodical dental examinations in preventing decay was shown.

Only such work as could be accomplished at one sitting was done, the children being urged to go to a local dentist for further care. Special attention was given to the first or 6 year molars, many of which would undoubtedly have been lost but for this work. These teeth were filled with the best alloy. No gold or permanent work in the front teeth was done, cement being used for these teeth.—*Exchange.*

The Foolish Season

The old-fashioned sea serpent is gone and almost forgotten, but this does not lessen the perils of open-season bathing, as the following story clipped from a Grand Rapids paper shows:

"A woman bather in Woodward lake, north of Ionia, was bitten on the foot a few evenings ago by the upper plate of a set of false teeth, which held on until they were brought to the surface. Hearing of the incident, Conductor Don Merriam of the Pere Marquette, visited the office of Sheriff Hoppough, where the assaulting masticators were being held, identified them as his and carried them away. Mr. Merriam said he lost them in the lake four years ago, while on a fishing trip."

Who Is Joseph Lobosco?

Does he want \$39.24? We have an entry in our books under date of December 30th, 1918, in favor of one Joseph Lobosco, \$39.24. This amount has been received, and unfortunately our bookkeeper neglected to enter the place from which the money came. At the time there was no record of an order, and it was decided to wait for the order, which we expected to come, as a matter of course. While waiting for this order the item was forgotten. It now turns up in our books, and troubles our conscience.

If Joseph Lobosco is still alive, or if anybody knows who he is, will he kindly step forward, and communicate with the undersigned, so that he can quiet his conscience?

It is presumed that the money came by postal order from a foreign country, but without data it is impossible to locate the source of the remittance.

ATLANTIC RUBBER MFG. CORP.,
Successors to TRAUN RUBBER CO.,
Wm. Ehlers, Secretary.

239 Fourth Ave., New York City.

Identification Wanted of Murder Victim

On Thursday, April 28, 1921, between the hours of 8:30 and 9:00 P. M., a fire was discovered in a little olive ranch a few miles from San Diego, California. Upon investigation by the Coroner it was discovered that a murder had been committed, as the charred body of a man was found half hanging over the wooden curbing of a well. Upon further investigation it was discovered that the man had been shot with a gun loaded with buckshot, the body saturated with oil and set on fire.

The body is described as that of a man between the ages of 25 and 40 years; 5.2 to 5.5 in height (the body being partly charred prevents accuracy); 135 to 140 lbs. in weight; light gray tailored suit of good material with fine pin stripe; cap of heavy gray goods with tinge of green in material (cap found in well and evidently belonged to the victim). Inscription inside of cap as follows: "By warrant to His Majesty, the King, etc., etc., Henry Heath, Limited, 105-107-109 Oxford St. W., London. Manufactured expressly for Geo. E. More, Buffalo, N.Y."

The victim had the following dental work, which was of such a nature that it should be immediately recognized by the dentist who did the work: Bridge from Upper Left Cuspid to Upper Right Lateral, swung behind Upper Right Central; Upper Right Cuspid crowned with gold; Upper Left Lateral and Central porcelain; long pin facings."

The cap described above was evidently worn by the victim, as it was thoroughly saturated with kerosene, and three loaded 38 cal. cartridges were also found in the well, and of the same brand as one found exploded by the body by the heat of the fire. The victim also wore an olive drab shirt, low-cut tan shoes, size 7, narrow last, with rather square toe of the Florsheim make, having the firm name of "Vander Venter" inside the shoes. Wore white silk socks and blue silk garters.

A thorough investigation and examination failed to reveal any money, jewelry or other personal property which might assist in the identification.

Any information or lead which may seem worthy of investigation in connection with this case would be gratefully received. Please communicate any information to undersigned.

SCHUYLER C. KELLY,
Coroner, San Diego County, California.